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BRICK *and* CLAY RECORD

Established 1892. Now in its twenty-ninth year.

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By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at
the Post Office, at Chicago, Ill., Under
the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other
Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland
Address all communications to home office

Chicago, January 10, 1922
Vol. 60 No. 1

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

How You Can Aid Industry's Development

NEXT MONTH the American Ceramic Society will hold its annual meeting. It will be the Twenty-third Anniversary of this growing technical organization. Before the formation of this Society very little technical discussion or ceramic literature was available on the various phases of ceramics. The industry itself was hardly making any progress.

With the formation of the American Ceramic Society 23 years ago, the knowledge of ceramic technology increased and with it the industry progressed. Those engaged in ceramic pursuits were more enlightened and as a result the ceramic arts developed to a higher state than ever before.

In more recent years the Society took on an increased activity and broadened its scope. During the war it was largely responsible for facilitating the manufacture of ceramic war materials.

The organization has grown to the extent that it takes in all branches of the ceramic industry. It is the technical mind of the ceramic world. Industrial divisions have been organized in art enamel, glass, heavy clay products, refractories, terra cotta and whiteware.

Each of these divisions has its own organization and committees. Each division is promoting research, and has the aim of advancing the arts and sciences in its particular field. The division deals exclusively with technical and scientific problems of manufacturing.

The American Ceramic Society always has been and will continue to be an organized influence stimulating cooperative research by furnishing the form and the means of publication. Its committees suggest researches and when called upon plan them in detail. Data are collected, classified and published.

The value of research is gaining in appreciation by American industries. Especially at this time and the period for at least the next ten years when increased quality and decreased production costs will be sought by everybody, will research be of necessity and valued.

The readers of this journal are chiefly interested in four of the divisions in the American Ceramic Society, namely, heavy clay products, refractories, terra cotta and whiteware. To hold present standards, to make progress, and to have the needed flexibility to meet changing trade demands, there must be a constant study of materials, processes and methods. The importance of having a thoro-going organization if research is to be conducted with the greatest economy in effort and money is recognized.

I'll Attend Conventions Because:

I need first hand information as to what is going on in the clay industry and the convention is the place to get it.

I need this opportunity to get away from routine business and mingle with those who are doing the big, vital things.

I need a wider viewpoint, a bigger mental horizon to fit into the national scheme of things.

I need to exchange my ideas with those of others. It's the only way to find out whether mine are worth anything.

I need optimism—lots of it—and some real, old pre-war enthusiasm for the year that's ahead.

Therefore be it resolved, that this year's conventions of the various clay products associations are my conventions, and their business is my business, and I'm going to attend.

The American Ceramic Society affords this opportunity, and every concern should become a distributor to the scientific progress of the industry by joining as a corporation member. The fee for this membership is very small.

* * *

Labor Readjustment Should Take Place Now

IN CONSIDERING the outlook for 1922, much stress has been laid on the need for reductions in producing costs. However, we might also look for lower freight rates and decreased labor wages. Right now the workers are on the under side of the cycle, and will continue in a quiet frame of mind until employment increases. However, the labor question is only dormant, and the time will soon appear when the workers will insist upon their will being fulfilled.

In the period of keenest competition for business which we are now entering, it is important that all industries be situated so as to meet the conditions. Only those plants that can meet the strenuous competitive conditions have a good opportunity to survive. Those handicapped by restrictions, high labor costs, and so forth will find the going rough.

This is an opportune time if labor conditions need readjustment in your territory, to bring about such readjustments. As the year progresses and business increases, as every promise indicates it will, changes will become increasingly more difficult to accomplish.

In the Streator (Ill.) Daily Free Press of Wednesday, December 28, there was carried a big announcement signed by a large number of manufacturers in that city, four of whom are prominent clay manufacturing companies such as the Barr Clay Co.; Streator Brick Co.; Streator Clay Manufacturing Co.; and Streator Drain Tile Co. Many of these plants have been operating as closed shop factories, but the announcement tells of the change in policy in the matter of employing labor, which hereafter will be along the lines of open shop principles.

From the great disparity of labor wages on clay plants in various sections of the country, as revealed at the recent American Face Brick Association convention, there is shown the need for readjustment of this phase of the industry on a great number of plants. This readjustment should be considered with earnestness at the present time.

—And don't forget—1922 will reward those who have reduced their costs!

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Hollow Tile Star Points to Chicago

Annual Convention of Hollow Building Tile Association to Be Held in Windy City—Nationally Known Men Will Address Delegates

THE SPIRIT OF "I WILL" will be the guiding light of what promises to be one of the greatest gatherings of hollow tile manufacturers that has ever taken place. Hollow tile manufacturers from every part of the country will be in attendance at the convention of the Hollow Building Tile Association in Chicago on January 25 and 26. The convention will be a meeting where things will be accomplished and will mark a long stride forward by the tile manufacturers toward a more prominent place in industry. The choice of Chicago is a happy one, because that progressive city, with its reputation for accomplishing things, will form an admirable background for this important meeting.

The La Salle Hotel, Chicago, Where the Hollow Building Tile Association Will Meet.

The convention will undoubtedly be the most representative gathering of hollow building tile manufacturers that has ever come together in any one place, and important events are on the program and difficult problems are to be solved.

Not One Member Resigned in 1921

The Hollow Building Tile Association is growing with a sureness and steadiness which augurs well for the successful future of that organization. Despite the fact that the past year has been one of comparatively poor business, the Association has not written into its records a single resignation. It has, on the other hand, added names to its membership list. Much has been accomplished thru the organization's advertising campaign and its comprehensive plan service, by means of which it has kept in constant touch with architects and prospective builders. Tho the Hollow Building Tile Association is not so large as some of the others in the clay industry, the results accomplished with the rather limited means at its disposal have been highly satisfactory.

During 1920, according to the last report of the Geological Survey, hollow tile showed a greater increase in value of total output than any of the other products. The reason for this is undoubtedly the Hollow Building Tile Association with its excellent promotion work and able management.

The idea which will dominate the coming convention will be to get a definite program for all manufacturers in the entire industry to pursue during the coming year. Efforts will be made to devise systematic plans to increase the markets of hollow tile. The committee in charge of the program will direct all speeches and papers toward this end. It is hoped that during the meeting something tangible will be developed; a definite plan which will give hollow tile manufacturers a club to induce farmers, home builders and others to go ahead with all contemplated building.

All Manufacturers Are Asked to Come

More than any previous one, this convention is going to be a get-together affair. Manufacturers are asked to come with ideas and suggestions, and in the mutual exchange of these they will benefit greatly. The meeting will be of interest to every salesman and every plant superintendent, as well as the executives.

The Hollow Building Tile Association extends a very cordial invitation to attend to every manufacturer of hollow tile in the country. Everybody will be welcome, whether or not they are members.

An extremely interesting program has been arranged and as there will be several speakers of national reputation and known ability, delegates are assured of hearing something worth while. The committee considers itself fortunate in having secured speakers who will give the delegates a worth while message.

That is one of the important things which a convention does for the manufacturer. It gives him a chance to rub elbows with the outside world, to find out how things are done away from his plant, and what the ideas of the leaders in industry are.

The convention proper will be preceded on the 24th by a directors' meeting. On the morning of the 25th the convention will be opened by President H. M. Keasbey of the National Fireproofing Co., who will preside. Following this will be the presentation of several papers. Arrangements have also been made for a special presentation of the hollow building tile "movie" for all those who have not seen it. On the evening of January 25 at 6 p. m. there will be a dinner and smoker, which will be even more interesting than that held at last year's convention. The smoker will be concluded early to give as many as desire an opportunity to visit the theater.

Report on Research Work Progress

Sessions will be continued on the 26th, and will close early on that day, to enable delegates to make train connections to their homes.

One of the interesting features of the convention will be

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a report by R. T. Stull of the activity and work accomplished by the Joint Research Council during the year. This research committee, it will be remembered, was organized about a year ago by the Hollow Building Tile Association, American Face Brick Association, National Paving Brick Manufacturers' Association and the Common Brick Manufacturers' Association, to promote research work and study operations in the clay industry. The Clay Products Association has recently joined this movement, and is now also contributing toward its support.

Members will be interested to know that P. H. Bevier of New York has been secured to cover thoroly the work of the Hollow Building Tile Association in the Bureau of Standards. His talk will be extremely interesting, as the Association maintains a fellowship in the Bureau.

The Hotel La Salle has again been selected as the meeting place, and the convention will be held in the Red Room of that hostelry. The convention facilities and good service which this hotel has always offered are unexcelled.

Rates are as follows: room with detached bath, $2 to $3 per day per person, or $3.50 to $5 for two persons; room with private bath, $4 to $7 per day per person, or $6 to $9 for two persons; two connecting rooms with bath, $6.50 to $9 per day for two persons, $8.50 to $12.50 for three persons, $10 to $14 for four persons.

U. of I. Offers Two Weeks' Course in Ceramic Engineering

THIS COMING YEAR will be a year of intensive production, of keen competition, where every advantage that you have in superior knowledge of correct manufacturing methods, will have a big effect in the final standing of your profit and loss account at the end of the year. "Knowledge is Power," is a saying the truth of which cannot be denied, so let us gain all the knowledge we can of our business so that we may have the power to be successful.

The University of Illinois this year offers you an opportunity to learn something about the manufacture of burned clay products thru the "Short Course in Ceramic Engineering." Here is a chance to increase your store of technical knowledge, to help finish off the education obtained in the sweat of your brow in the clay pit, in the heat of the kilns and in the dust of the machine room.

Gives Technical Knowledge

This course embraces two weeks of intensive study in ceramic engineering which offer a wonderful opportunity to gain a clearer insight into, and more complete comprehension of the technical side of clay products manufacturing. It is a splendid investment for a manufacturer to send his superintendent or engineer to take in this short course and the advantages it offers.

A practical education in ceramic engineering, gained by personal experience, and contact with actual problems arising on the clay plant is a very fine thing. Now combine this practical knowledge with a knowledge of the technical side of ceramic engineering and you will be fitted to cope with all but the most baffling problems encountered in clay products manufacturing. The value of the short course has been demonstrated repeatedly and vouched for by former attendants. The university does not claim to be able to give in a two weeks' course a complete knowledge of all there is to be known in the ceramic industry, but by cutting out elementary and nonessential things and concentrating on the important phases of the work it is possible to accomplish a great deal in the short time.

Will Help to Understand Research Results

The big associations in the clay industry are now promoting a program of research and the results of this work will soon be evident. The men composing the Joint Research Committee are all technical men and the results of experiments and tests will most probably be issued in the form of technical bulletins. In order for plant superintendents and engineers to understand these bulletins and the work which the research committee is doing, and to apply the results of the work successfully and beneficially to their own plant, a knowledge of the technical side of ceramic engineering is essential. This is what the "short course" can do for you.

Another important consideration is the reduction of costs, which, as has of late been pointed out repeatedly in Brick and Clay Record, is an item which cannot be overlooked in the new year. The interchange of ideas and the knowledge gained during the short course will help in pointing out to you where you are now making mistakes in burning, in drying, in setting, or in the many other departments of the clay plant.

List of Subjects to Be Treated

The opening and registration day for the short course at the University of Illinois is January 23, 1922, and the lectures will extend thru to February 4. The subjects covered will include elementary physics and chemistry; the origin, classification, winning and refining, and testing of clays; the shaping, drying

FIRST WEEK—JANUARY 23-28

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-9	Registration and Information	Physics adn Chemistry	Physics and Chemistry	Physics and Chemistry	Physics and Chemistry	Physics and Chemistry
9-10	Room 202 Ceramic Engr. Building	Origin and Classfication of Clays	Clay Testing	Clay Testing	Clay Testing	Clay Testing
10-11	Address Dean Richards	Engines and Boilers	Engines and Boilers	Business Law	Clay Testing	Business Law
11-12	Physics and Chemistry	Prospecting and Sampling	Winning of Clays	Explosives and Blasting	Boiler Water	Coal
1-2	Physics and Chemistry	Physics and Chemistry	Physics and Chemistry	Physics and Chemistry	Physics and Chemistry	Clay Testing
2-3	Origin and Classification of Clays	Clay Testing	Clay Testing	Clay Testing	Clay Testing	Clay Testing
3-4	Clay Testing	Clay Testing	Clay Testing	Clay Testing	Clay Testing	Dies
4-5	Clay Testing	Clay Testing	Clay Testing	Clay Testing	Clay Testing	

SECOND WEEK—JANUARY 30-FEBRUARY 4

Time	Monday	Toesday	Wednesday	Thursday	Friday	
8-9	Drying	Drying	Burning	Burning	Kilns	
9-10	Shaping	Bodies	Glazes	Glass	Glass	
10-11	Drying	Kilns	Burning	Shaping	Pyrometry	
11-12	Equipment Control	Bodies	Glazes	Glass	Glass	
1-2	Reading of Drawings	Kilns	Refractories	Dynamos and Motors	Dynamos and Motors	
2-3	Production from Equipment	Bodies	Gas Producers	Refractories	Glass	
3-4	Refractories	Gas Producers	Glazes	Glass	Question Box	
4-5	Reading of Drawings	Gas Producer Demonstration	Reading of Drawings	Pyrometry		

Schedule of Lectures for the Short Course in Ceramic Engineering Offered by the University of Illinois.

and burning of clay products; bodies and glazes; the technology of glass; refractories and refractory products; kiln construction; coal and gas fuels; engines and boilers, dynamos and motors, equipment control; pyrometry; drafting and reading of drawings, and business law.

The University of Illinois is located at Urbana and Champaign, Ill., on the Illinois Central Railroad and about three hours' ride from Chicago; interurban lines connect Champaign and Urbana with Danville, Kankakee or Decatur and Springfield.

The Machine Room of the Ceramic Department at Illinois University. This Equipment Will Be Used by Those Attending the Short Course.

There are no charges for tuition and the course is open to any one interested. It is not necessary to have had university training to attend this course, it is open to anyone with equivalent to a common school education. It would be well to send your application for enrollment at the earliest possible time.

* * *

ANNOUNCE 40 PAPERS FOR A. C. S. MEETING

At least 40 papers will be presented at the American Ceramic Society convention at St. Louis, Mo., on February 27 to March 3, inclusive. This list, the advance announcement of the convention states, is not complete, and many more papers will be announced later. These papers are technical discussions of different phases in all the various types of ceramic manufacture. In addition to the papers to be presented, there will be about 15 Round Table discussions, taking in such interesting subjects as whiteware materials, heat conductivity and insulation, standardization of hotel china, glass house refractories and many more.

The convention will be held at the Hotel Statler, and all reservations should be made direct with the hotel.

* * *

INDIANA PUTS PAVING BRICK AND CONCRETE ON MORE EQUAL BASIS

"It is very likely that some roads to be constructed by the state highway commission in 1922 will be of brick," says a state highway department news bulletin issued recently over the signature of Lawrence Lyons, director of the department. The state highway commission recently changed specifications under which state roads have been built. The specifications require a thicker concrete road and a different type of brick road. The changes were made at the insistence of brick interests and are intended, the bulletin says, "to make brick and concrete roads constructed by the state more nearly of the same quality and nearer the same costs" and were "agreed on by Governor McCray and the commission."

"The new specifications will be used," the bulletin says "for the construction of 66 miles of pavement to be laid on the National road to complete that transcontinental highway across Indiana from Terre Haute to Richmond, and which will be expedited early in the new year. Receiving proposals for closing these gaps was contemplated for December 14, but contract letting was postponed when it became apparent a change in specifications was necessary to bring about fair competition among the interests handling road materials.

"Mr. Lyons estimates that under the new specifications brick roads can be built approximately $5,000 a mile cheaper. He does not believe the added cost of concrete roads will be much greater than under the old specifications. Highway officials point out that under the new plans roads built from now on will be much more durable, and that by opening the proposals to competition, prices for actual construction will be lower.

"The highway commission has not changed its position relative to building stone and gravel roads. Governor McCray made it plain at a recent conference with the commission that his attitude as regards the use of native materials for Hoosier roads was the same as announced months ago.

"The agreement to change specifications marks a new era in Hoosier road construction. In the past there was virtually no choice but to build main market roads of concrete, due to the fact old specifications were not inducive to competition between brick and concrete interests. Under the new specifications all materials will have fair competition."

* * *

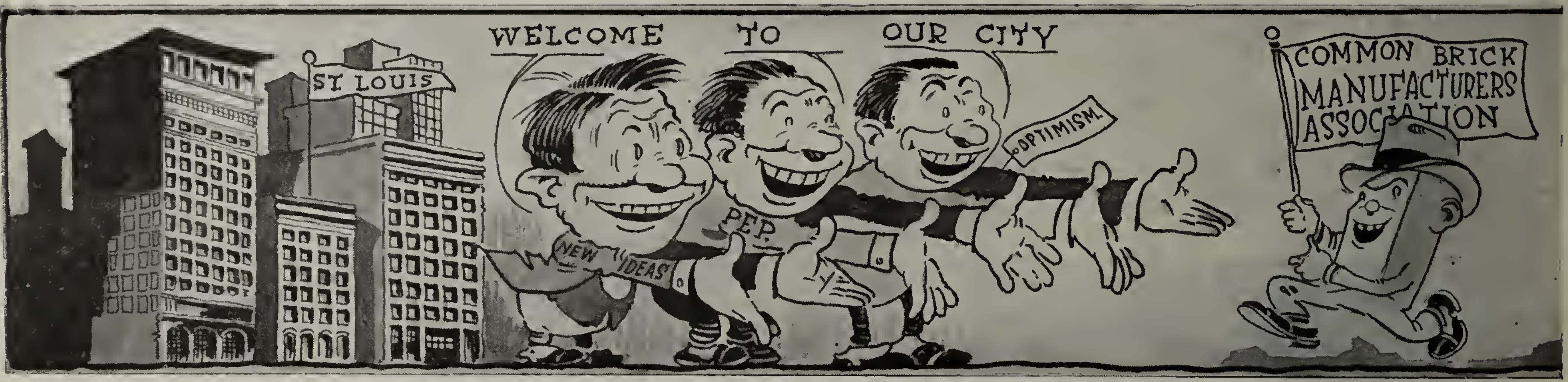
KENTUCKY CLAY MEN SET FOR CONVENTION

The annual meeting of the Kentucky Clay Products Association has been set for the Louisville Old Inn Hotel, January 24. The Kentucky Retail Hardware Dealers convene on the same day for a four day session. On February 7 and 8, the Kentucky Retail Lumber Dealers meet at the Seelbach Hotel. These three organizations have the largest interest in brick.

* * *

FINISH TESTS ON MAGNESITE

The U. S. Bureau of Mines has recently finished cooperative work with the Northwest Magnesite Co. on the technology of caustic magnesia. This work was done at the Pacific Experiment Station at Berkeley, Cal. One of the things brought out in the work was that test runs with a modern type of mechanical furnace indicate such a furnace can be used commercially for calcining magnesite to produce caustic magnesia.



All Common Brick Roads Lead to

Meeting Promises to Be Record Breaker in C. B. M. A. History of Brick—Many Fine Speakers Will Treat Subjects of Vital In-

"ON TO ST. LOUIS" is the war cry of the Common Brick Manufacturers' Association and should be the cry of every common brick manufacturer in the country interested in what 1922 has to offer.

The Third Annual Convention of the Common Brick Manufacturers' Association in St. Louis on January 30, 31 and February 1, 1922, will mark another milestone in the progress of the common brick industry of America.

St. Louis offers many attractions. It is one of the great cities of the world, being the distributor to the entire Southwest. It holds especial interest for the brick manufacturer, as it is decidedly a "brick city." No frame building is permitted in St. Louis.

The convention is the place to get a new supply of ambition, enthusiasm and "pep" to carry thru the next year. It is the place to get new ideas thru meeting other men of the industry, the enterprising and prosperous brick manufacturers of the country. Important things will happen at the convention in St. Louis; the pace will be set for the year to come.

The industry has just passed thru a year of varied success, a year where some have made money and others not, but also a year where common brick has risen to a greater importance in the lives of the public than the manufacturer ever before dared to hope.

C. B. M. A. Resuscitated Common Brick Industry

This is the work of the Common Brick Manufacturers' Association. Before the organization of this association the industry was on a downward path. It was made up of a great many manufacturers, working each by himself with no common bond of interest with other manufacturers turning out the same product. Little or nothing was done to promote common brick, and the production and consumption of that commodity was steadily growing smaller. The number of plants was being lessened by the failure of many manufacturers who could not survive the tight conditions and unwholesome competition brought about by the slackened demand.

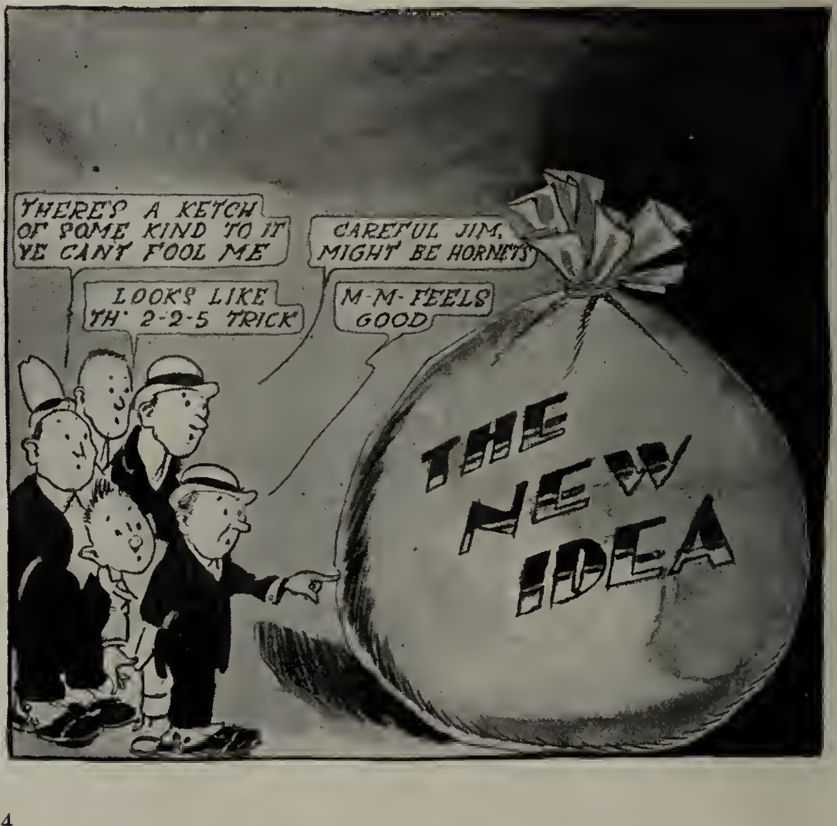
The organization of the Common Brick Manufacturers' Association brought together the manufacturers of common brick for the purpose of solving their joint problems and difficulties and for the beginning of a promotion campaign which would bring common brick into a new light before the public.

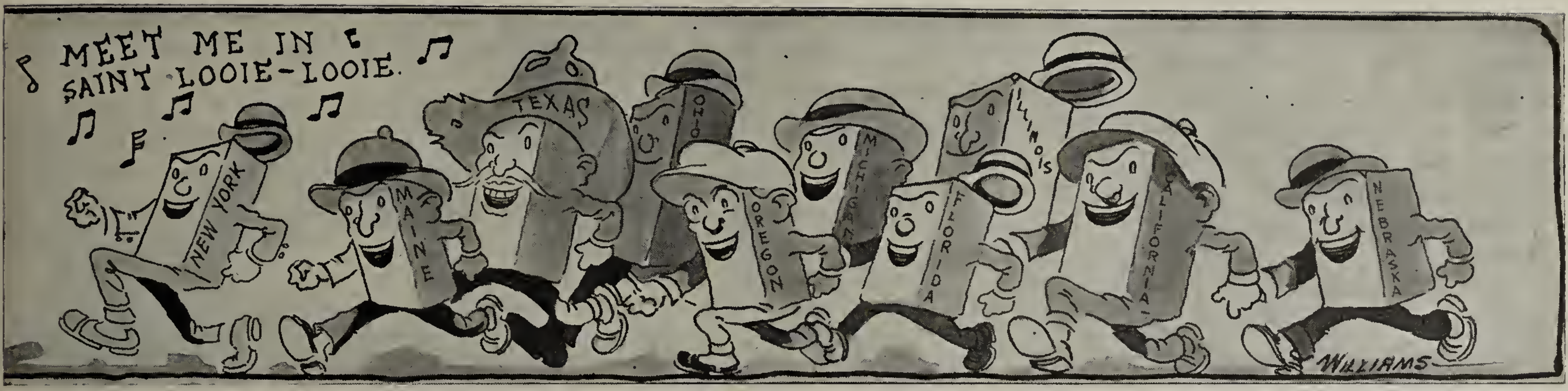
With the beginning of the promotion work by the new association, a great change came over the industry. Many manufacturers at once grasped this new effort as a life saver and steadily the membership has increased until today the organization embraces the leading manufacturers of common brick in every part of the United States. With the forming of the new Association, conventions also came to have a greater significance for the common brick manufacturer. Convention time has become a period to be used for the exchange of ideas, the propounding and solving of problems, and a well of enthusiasm at which the common brick manufacturer could revive his spirits.

Association Proposes New Activities

The plan of the directors and management of the Common Brick Manufacturers' Association has been to bring to the manufacturers each year at least one important new activity. The policy of the association is not to attempt too many things at once, but it aims to have each branch of its work thoroly organized before taking up other activities.

The first important activity for the association to under-


THERE'S A KETCH OF SOME KIND TO IT YE CAN'T FOOL ME
CAREFUL JIM, MIGHT BE HORNETS
LOOKS LIKE TH' 2-2-5 TRICK
M-M- FEELS GOOD
THE NEW IDEA



C. B. M. A. Convention at St. Louis

—To Propose New Activity Which Will Directly Stimulate Sales terest — Expect Former Attendance Records to Be Broken

take was that of advertising and promotion, and at the first annual meeting in Columbus, Ohio, in 1920, secretary-manager Ralph P. Stoddard proposed to the brick men a national campaign of advertising to be followed with architectural service, a plan to aid those who would build small brick homes. Work on this promotion plan has been conducted during the past two years with increasing force, and with almost unlooked for success.

At the second convention of the C. B. M. A., in New York City, a new idea was brought before the delegates, which aroused not only their interest but that of practically every architect, contractor and prospective home builder in the country. This idea was the development of the Ideal wall, with which every brick manufacturer is now familiar, and thru the use of which it is now possible to secure a permanent brick home or building with all the advantages offered by this type of construction, at a cost which compares favorably with that of cheaper material. This was practically a revolutionary step which will have a permanent effect in the nature of increased demand for common brick. Thru the untiring efforts and promotion work of the C. B. M. A., this type of construction has, in the short space of one year, come into almost general use in the country, and the building codes of more than 60 cities have been changed to admit the Ideal wall.

Much Interest Shown in Ideal Wall

The interest of architects and home builders in the possibilities of this wall is tremendous; yet this idea is only in its infancy, and it would be difficult at this time to even guess the volume of Ideal wall construction that will result from another year's promotion.

This year, at the St. Louis convention, the third new idea, announced as "Mystery No. 3," is to be revealed. Secretary-manager Stoddard promises that the mystery, when revealed, will prove just as interesting and as important to the brick manufacturer as did the proposal of a national advertising campaign and the Ideal wall. Asked why he kept his new idea in the dark, Stoddard said, "In the first place, it is too long a story to tell in advance. I believe that when brick manufacturers hear the whole story at St. Louis they are going to find Mystery No. 3 very much to their liking. I will be greatly disappointed if the majority do not say at once that it is the greatest move ever started to help the brick manufacturer.

"Then in the next place," continued Stoddard, "we all have some curiosity about us. We like problems and puzzles, and we are going to draw some people to St. Louis thru their curiosity alone. Be assured that we are not playing any joke on them. Mystery No. 3 is a real idea. It deals with a most important fundamental in the success of the brick man. Its application is directed to the market. It has nothing to do with the plant and handling of brick. If this idea had been set in motion two or three years ago, I sincerely believe that there would have been a strong demand for brick all thru the past year. We are advertising brick on its merit and are telling the story of brick to thousands of people who knew very little about it before. We have eliminated the unnecessary cost in brick work by the Ideal wall, and have entered the field of even the so-called 'cheap' building. Now, with this big new idea which we will expose to view in St. Louis, we are going to attack another of the obstacles that is keeping the brick order away. This new activity will be a distinct advantage to our members without costing them anything. It does not involve any increase in dues or assessments."

Expect Excellent Attendance

If the success of the first two conventions of the Common Brick Manufacturers' Association is any criterion, the announcement of Mystery No. 3 should prove an irresistible inducement for every brick manufacturer who has a desire to improve his conditions, to attend the convention at St. Louis. Important as it is this feature will, however, be only one of many.

The program for the three days contains many attractions which will make the convention entirely worth while. At the opening session, Monday, January 30 at 2 p. m., Mayor Henry W. Keil of St. Louis, who is a brick mason when not mayor-ing, will welcome the delegates.

Another speaker who should be highly interesting is Josiah Kirby, president of the Cleveland Discount Co., a twenty-million dollar corporation and the second largest in the country. Mr. Kirby will talk on "The Building Outlook for 1922," and since he is one of the largest loaners of money for building purposes in the United States, his opinion is authoritative and may be anticipated with real interest.

Elmo Martin Will Address Convention

One of the features of unusual interest will be a talk by E. Elmo Martin, who supplements his words with a blackboard and a piece of chalk. Mr. Martin has an enviable reputation as a speaker, and is retained by some of the largest corporations in the country because he instills ideas and principles into the minds of his hearers, making them work better and with greater efficiency.

On Tuesday evening there will take place an informal dinner, at which Senator George W. Cartwright, vice-president of the American Educational Association, will speak. Senator Cartwright's ability as an orator is well known and as he is credited with having the sanest views on the relation of employer and employe his message will undoubtedly be well worth while.

Another speaker of national reputation and a man every brick manufacturer will delight in meeting and hearing has promised to be the guest of the association at the Tuesday evening dinner. He has requested that his name be withheld until later, owing to the many demands upon his time for speaking engagements.

The foregoing are high-lights of the convention, but there will be other subjects discussed by able speakers during the three days of the convention, such as local organization, local and national advertising, bricklayer cooperation, prison-made brick, new contracts for 1923, location of convention in 1923, and other interesting subjects. The work accomplished by the Joint Research Commission, which is conducting investigations in the plants of members, will be explained.

C. H. Bryan Will Preside

President Charles H. Bryan of Detroit will preside at the opening and closing sessions, and will call upon vice-presidents W. N. Carey, Albany; W. H. Hammond, New York; John P. Cahoon, Salt Lake City; and Fritz Salmen, New Orleans, to preside at other sessions. Treasurer Ernest S. Barkwill of Cleveland will give his annual report, and there will be reports of important work by William Carver, architect of the Association, and by D. Knickerbacker Boyd, Philadelphia, consulting architect. Secretary-manager Stoddard will also present his annual report, outlining the results accomplished during the past year, and proposing the lines of activity for the coming year.

In rooms adjoining the convention hall there will be a big display of advertising, both national and local, showing photographs of Ideal wall houses and representing other activities of the Association.

What may develop into one of the big features of the convention will be the exhibits of the clay machinery manufacturers, and the plans are being made for the part these interests will have in the meetings. In fact, the latest plan of president Bryan is that there shall be a special session for the machinery producers In addition plans call for the setting aside of a considerable space that there may be ample room for the exhibits that the manufacturers will send. Opportunity for those who wish to do so will also be offered for motion picture exhibitions. Nineteen manufacturing concerns have already taken space for their exhibits, and will have liberal representation from their various plants.

Bring the Ladies with You

All brick manufacturers are urged to bring their wives or lady friends, as a committee will be appointed upon arrival in St. Louis to arrange entertainment for the ladies. A tea, card parties and theater parties will also be provided.

All railroads have offered reduced rates to the delegates to this meeting. Those attending should buy tickets to St. Louis only and take a certificate from the agent selling the ticket. At the convention the certificate will be endorsed by a railroad official, and this endorsement will entitle the holder to a half rate for the return trip. Those who stop at Indianapolis in the week preceding the C. B. M. A. meeting at St. Louis should not fail to take certificates when buying tickets to St. Louis. It is necessary to have 350 certificates presented in order to make them valid.

The Common Brick Manufacturers' Association extends a cordial invitation to attend the convention to all brick manufacturers who have not seen fit as yet to join the organization. It is especially desired that those attending bring as many of their staff with them as possible. There is no limit to the number of persons who may come from a single company.

The efforts of the Common Brick Manufacturers' Association to benefit brick are not being conducted selfishly. Even the advertising is signed "the common brick industry" instead of by the name of the Association, giving all common brick manufacturers a share in the benefits. Non-members are urged to go to St. Louis and get in line with the march of events in the common brick industry, and benefit by the progress that is being made in their interest.

* * *

SOUTH CONSIDERS TARIFF QUESTIONS

Brick manufacturing and clay products industries of the southern field will be well represented at the special meeting of the Southern Tariff Congress being held January 9 and 10 at Washington, D. C., to consider two matters of vital importance to all southern industry. A call for the meeting was issued December 31 to representatives of the 64 industries in the South that comprise the membership of the congress.

The first of the two problems considered is that of American valuations in the permanent tariff bill, and the second that of conferring upon the President emergency power to change duties upon recommendation of the tariff commission. It was announced in the call for the meeting that both of these problems were to be thoroly threshed out and some definite decision reached. Southern industry is very largely opposed to both these provisions.

The association was, on January 9, to have appeared before the senate finance committee asking for duty on all southern products, the request being reinforced by a petition favoring it, and signed by some 3,000 bankers of the South.

As export business in clay products gives excellent promise of a record year during 1922 the activities of the tariff association are of vital importance to the welfare of the industry in the southern field.

Burn Face Brick with Producer Gas

Indiana Concern with Small Daily Capacity Equips Plant to Turn Out High Quality Clay Ware

IN THE PUBLICATION of this article we have chosen a small plant of small capacity as the subject,—a factory where improved production methods are constantly sought and where good quality ware is the watchword. Just because a plant is small, there is no reason why it should not and cannot be equipped effectively to operate at low cost. In the past, managers of small plants have too generally failed to see the adaptability of labor and cost saving equipment to their needs. The factory described herewith has made suitable progress in the right direction.

The plant in mind is one of the member plants of the Illinois-Indiana Division of the American Face Brick Association, and is managed by Gill Landgrebe, who is well known thruout face brick circles. It is not a model or ideal plant by any means, but is a leader among plants of small capacity. The establishment is known as the Huntingburg Pressed Brick Co. and is located on the outskirts of a small city of the above name in southern Indiana. It is situated on the Southern Railroad about 75 miles west of Louisville and 45 miles northeast of Evansville.

25,600 Daily Capacity

25,600 brick is the daily output. These brick, which are smooth face brick for the most part, some mats and a few rough texture reds and cream, find a market in all sections of the United States. Red brick have been the predominant color, altho buff brick are now being made in greater quantities from a vein of fire clay which is interstratified in the shale bank.

The clay is obtained from a shale bank of 60-foot height, located a short distance from the plant. The clay is obtained by dynamiting the shale, which is of a soft variety. Then a squad of pick and shovel men load the clay onto small cars, which are hauled to the factory by mules, and the raw material dumped before the dry pans. Six or seven men take care of the needs of the plant in the nature of supplying the clay. This work is done by contract, that is, so much is paid for each ton of clay delivered to the plant, and in this way the company is not concerned with the faithfulness of the employes, since the men in the pit are paid according to the tonnage of material delivered. Naturally, of course, the clay pit gang are required to deliver a certain minimum quantity of clay.

The clay is prepared in the usual manner by grinding in the dry pan, screening and then feeding into pug-mill. The brick are cut by rotary cutter from a stiff mud column expressed from the die of the brick machine. The brick are then packed as customary on dryer cars and delivered to the dryer.

Use Producer Gas for Firing and Drying

Up to the point of drying the ware, the manufacturing methods are very much the same as those employed in other clay factories, altho unusual care is taken to keep the machinery in first-class condition. From the point of drying the clay ware on to the completion of its manufacture, the processes are different from those employed on many small plants, and large plants included.

Producer gas is used on this plant for both drying and burning the brick. It is this feature wherein the plant operation differs from usual brick plant methods. The dryer is an eight single track tunnel type of 100-foot length, and fired with producer gas. A flue runs thruout the entire length of each tunnel, and the gas burner sends the flame of heat into this flue. At the rear end of the tunnel, the flue connects with a large collecting flue, which conveys the gases into the stack from where they are dissipated into the atmosphere. Surrounding this flue is a small air space which becomes heated thru radiation from the flue, and this air circulates among the brick and dries them.

In this manner the ware never comes into contact with any spent gases and hence is not covered by soot or affected by any sulphur present in the gases, since the burned gases are confined to the flues. About 45 bushels of coal are required to fire the gas producer in order to furnish sufficient gas for the dryer for each period of eight hours.

Drying Cost Is 90 Cents Per M

Assuming that there are about 80 pounds of coal in a bushel, this is equivalent to 3,600 pounds of coal. For 24 hours this would amount to 10,800 pounds of coal, and since 25,600 brick are dried in this period, the amount of coal used is 422 pounds per thousand brick. Examination of the cost figures of this plant reveals that the brick are dried at a cost of 90 cents per thousand brick, figuring coal at $4 per ton.

The kilns are also fired with producer gas. There are seven kilns on the plant, six of which are in operation. Five are rectangular kilns and one a round down-draft kiln. The rectangular kilns measure approximately 70 feet long by 23 feet wide. Two of the kilns have multiple stacks, while the remainder are double stack kilns. The rectangular kilns have 14 burners, whereas the round kiln is equipped with ten. The rectangular kilns hold about 120,000 brick.

The ware is fired to a temperature of about 2,000 deg. F.

General View of the Plant of the Huntingburg (Ind.) Pressed Brick Co.

The Gas Producer House is Plainly Shown in the View on the Left. The Other Picture Shows the Huntingburg Pressed Brick Co.'s Coal Unloader.

and requires about five days of burning time. The kilns are equipped with pyrometers, which guide the burner in firing the kilns and settle measurements are also taken. The settle at the finish of the burn usually amounts to about 14 inches.

Save ¼ Ton of Coal with Producer Gas

In firing a kiln close tab is kept of the amount of fuel used for producing the gas required for burning the kilns. On the average, about 1,050 pounds of coal are required to burn each thousand brick in the kiln. This compares very favorably with the results obtained before the producer gas system was installed. When coal was fired directly, it took 1,600 pounds of coal for each thousand brick set in the kiln to complete a burn. Besides this, wood was used in water-smoking. Accordingly, a comparison of these results show that a saving of about one-quarter ton of coal per thousand brick has been accomplished thru the introduction of producer gas firing. More than this, no wood is now required in water-smoking.

The saving in fuel is not all the benefit that has accrued from the introduction of gas producers. The kilns are now producing 95 per cent. of No. 1 ware, which is a considerably higher percentage than was ever obtained with coal firing. Moreover, a complete day has been saved in burning time.

In manufacturing the gas, three Manufacturers Equipment Co. gas producers are used, and they are fired with an Indiana coal known as Ayreshire Nut coal or a No. 4 washed coal. As is well known, the success of a producer gas system is largely dependent upon the kind of coal used in the producers.

One man takes care of the producers and one man is in charge of the kiln burners. The kiln man helps to stoke the gas producers. A 40-inch fan is used for maintaining the proper air pressure at the kilns. Two of the three producers have a steam blower each and the other has two blowers which force the air and steam up thru the bed of the producers, thereby gasifying the coal.

Flues Must Be Cleaned Often

Whenever gas producers are used on a plant, the flues conveying the gases to the kilns are frequently filled with soot due to the cooling of the gases and the deposition of the carbon. When this happens the tunnel must be cleaned occasionally or the accumulation will interfere with the passage of the gases. This, however, is a comparatively simple task. The action of the producer is reversed and the flues lighted to burn out the soot. This is done every two weeks on this installation, and only requires the short space of two or three hours, when the flues are in shape and ready for use again.

The producer gas system, which was installed three years ago and has been in almost continuous operation, represents an investment of $22,000, which means approximately $3,000 per kiln. However, the savings that have been made will soon pay for the investment. Figuring coal at $4 a ton and a saving of one-quarter ton per thousand brick, it will be seen that for a daily capacity of 25,600 a saving of approximately $25.60 per day is effected.

Above the producers a hopper is provided for coal storage. This hopper has a capacity for three cars of coal. For filling these hoppers a coal unloader was installed, and this of course facilitates the emptying of the cars and the conveying of the fuel into the hoppers.

In all, there are 28 men employed by the Huntingburg Pressed Brick Co. These men are all working to the end of turning out a high grade product, for which the concern is well known. The plant has progressed very well under the direction of Mr. Landgrebe. That he is desirous of learning the best methods of production and is eager to keep pace with developments is indicated by his action in sending his assistant, T. Hilsmeier, to the last Short Course in Ceramics held at the University of Illinois.

Gas Producer Burning Equipment Installed on a Kiln.

Hoosier Capital Ready for N. B. M. A.

Thirty-Sixth Convention of Veteran Brick Manufacturers' Organization Will Open in the Claypool Hotel, Indianapolis, on January 23

INDIANA'S CAPITAL—Indianapolis, is preparing itself for this year's annual convention of the National Brick Manufacturers' Association. The meetings will extend over a full week this year, and will commence on Monday, January 23, and continue until the 28th.

As at the previous convention which was held in Indianapolis in 1918, the headquarters will be at the Claypool Hotel, which is noted for its unexcelled facilities for convention functions. Its beautiful lobby, its great banquet hall known as the Riley Room, and its convention halls give it high rank for all business and social gatherings of whatever character. The rates at the Claypool Hotel range from two dollars and up per person.

Unlike other years when other meetings were held jointly with the National Brick Manufacturers' Association, this year's convention will be strictly an N. B. M. A. affair. The Common Brick Manufacturers Association and the American Ceramic Society have this year decided to go to St. Louis in separate conventions.

Due to the fact that a meeting was held in Indianapolis but four years ago, many of the members of this veteran organization will remember the attractions which Indianapolis has for its visitors. The Soldiers and Sailors Monument located in a circle in the heart of the city is an especially noteworthy feature of this city. This monument is one of the most beautiful of its kind erected anywhere.

Railroad facilities at Indianapolis are unusually good, and despite the fact that it is a far inland city, it is quite accessible from nearly all points of the United States.

Thus far the program for the annual meeting has not been completed, but it is anticipated that the full program will be ready for distribution in a short time.

Due to the fact that the common brick manufacturers commence their annual meeting on the Monday following the week of the N. B. M. A. meeting, some arrangements are being made to travel in a group from the N. B. M. A. meeting to St. Louis.

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Expect Railroad and Commercial Building to Revive Construction in New York in 1922

BUSINESS PROSPECTS in the building construction industry for 1922 cannot conservatively be classified under a single heading, says the Dow Service daily building report of December 31, 1921.

The year should be a good one, but there are still four months of economic readjustment ahead. In that time there will be a great number of prospective building investors who will hold back in the hope of reaping cost benefits by a possible reduction in the rate of building trades wages, lower prices of basic building materials as well as equipments in general, reduction in freight rates, a transition from a run on habitational building to commercial construction, affecting material supply and delivery, a favorable turn in the rate of foreign exchange and pound sterling, which would have a bearing upon the industrial situation and a change in building trade policies where they conflict with the public welfare.

Winter Material Movement Has Been Active

Were it not for these retarding factors, there would be a pressure upon existing building material and equipment supply that easily could reproduce the conditions of building material stampede of early 1920 when buyers of building material were willing to pay any price inside or outside of reason, if they could only obtain materials fast enough to keep their jobs moving. Indeed, similar scenes are not wholly outside of the pale of possibility in 1922.

Every professional building investor who keeps himself sufficiently close to building construction economics has long since sensed this possibility. That is one reason why winter building material movement has been so active. They are getting into the market early in full realization of the fact that the small quantity building material buyer is not likely to retain his dominant grip upon the supply market very far into 1922.

From the time that the tax ordinance was passed until the present day, all hope for building material prices reaching pre-war levels vanished. Indeed in the height of the building construction season, the curve of certain building material prices turned upward, due to excessive demand over supply. This upward price movement was quickly checked, however, not because demand waned perceptibly, but because distributors began to cut.

Bright Hopes for 1922

The prospective home builder would be perfectly justified in anticipating a continuation of these price cutting tactics, were he likely to be the sole factor in the building material buying market for 1922. But there are to be other consumers of basic building materials during the next 12 months.

The slightest turn in the foreign situation, upon which the adjournment of the Disarmament conference is expected to have a favorable influence upon commercial building requirements coupled with the assured entry into the construction market of the railroads with their vast replenishment requirements, aggregating three times the aggregate total of building construction for the entire country in its best previous year, all combine to bring the large order purchaser of building materials back into the market from which he has been absent since 1919.

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A. C. S. CHANGES P. O. ADDRESS

A notice recently sent out by the American Ceramic Society states that hereafter all communications to this organization should be addressed to Lord Hall, Ohio State University, Columbus, Ohio.

Importance of Trade Associations

How Associations Were Developed—Significance of Anti-Trust Laws as Applied to Trade Associations—Advocates Educational Advertising

By E. W. McCullough

Manager, Fabricated Production Department, Chamber of Commerce, U. S. A.

AFTER MORE than 50 years of trial the trade association as an instrument for crystallizing the thought and purposes of an industry and carrying out its wishes has been so perfected that the Government now seeks contact with the industry thru its trade associations.

The present Secretary of Commerce has on many occasions stated his desire for contact with trade lines thru their associations, but has intimated that such organizations should put themselves in positions to speak for the industry by including in their membership the largest possible representation, also thru the perfection of their machinery for gathering, analyzing and compiling all desirable information not only of service to themselves, but to the Goverment and the public.

To make possible such cooperation, it is to be expected that some Governmental department will be authorized at no distant date to make a statement as to the functions or activities trade associations may engage in under existing law. It is believed that such a statement would have been issued ere this but for the fact that several Governmental cases are now pending against certain trade associations, involving the question of the proper use of statistics, open price plans, averages in cost accounting, and so forth.

How Trade Associations Were Developed

For the purpose of better understanding why there has been any clash between these trade associations and the Government as to construing the meaning of our anti-trust laws, let us take a brief backward glance at the beginning and development of trade organizations. Most of them were formed for protective purposes, that is to say, in some instances, the passage of a law placing upon an industry an unusual or unjust burden drove competing manufacturers together to meet and adjust such conditions. The upsetting of a freight classification, labor difficulties, shortage of raw material supply and a thousand other common difficulties gave cause for organization. If such undertakings were successful it encouraged the formation of associations and one after another of the problems of an industry was dealt with by the organization.

The fact must not be overlooked that many such associations were formed before the passage of the Sherman and Clayton laws. Also that the matter of entering into gentlemen's agreements, so-called, for the purpose of securing advances in prices or control of production was not uncommon in or out of those early associations. Furthermore, such restrictive agreements are today not uncommon in foreign lands and are not always frowned upon by their laws.

Anti-Trust Laws Are Hard to Interpret

Then came a change in the attitude of the public mind toward monopoly and control and the Sherman law was enacted to remedy the situation. Unquestionably, the design was to promote the square deal and prevent the strong getting the better of the weaker, but there is ground for believing that the framers of the law in their diligence to so word the law that none guilty might escape, have provided protection for the inefficient. It is also not one of those laws, "that he who runs may read," for the courts have struggled many times to interpret it and have on occasions rendered decisions on the basis of "reasonableness" rather than the letter of the law.

The Clayton law which followed has been considered by many as designed to clarify the Sherman law, but while it has helped there is still much to be wished for.

In the first draft of the powers given the Federal Trade Commission was authority to interpret for business the meaning of our regulatory laws, but this was eliminated before the act became law.

Here I would like to call your attention to a statement which was issued recently by Secretary of Commerce Hoover, which is as follows:

"The relation of Trade Associations and Trade Institutes to the Anti-Trust laws have been discussed at great length in the Administration. Of the many thousands of such organizations there are a small minority who have degenerated into ways that make for restraint of trade.

Hoover Approves of Associations

"All are agreed that the purposes and actions of the large majority of National associations are a constructive contribution to public welfare. Their activity in promotion of better business practices, advancement of technical processes, simplification of production, standardization of quality, extension of foreign trade, commercial arbitration, etc., all make for more efficient industry and business. Many of them collect information as to the production, stocks of raw and other material, percentage of industry in active operation, total orders in hand, all of which when available to the public, contribute both to stability and the increasing efficiency of industry and to the protection both of the smaller manufacturer and the consumer. The Department of Commerce wishes to cooperate and assist with all of this sort of effort.

"A small number of such associations have been engaged in collection of data of the prices for the exclusive use of their members. Some of these associations have been charged with limiting areas of commodity distribution among their members and other misuse of information.

Authority of Federal Trade Commission

"Whether these latter practices constitute a violation of the National Anti-Trust Laws must be determined by the courts, and this the Attorney-General is vigorously proceeding to find out.

"All this raises anew the question of the authority of the Federal Trade Commission. The original conception of the Commission was that it should, amongst other things, advise business men as to what constituted a violation of the restraint of trade laws, that these powers were struck out in the course

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Editor's Note—Excerpts from a paper read at the Convention of the American Face Brick Association at White Sulphur Springs, by E. W. McCullough, Manager Fabricated Production Dept., Chamber of Commerce, U. S. A. Mr. McCullough also addressed the National Paving Brick Manufacturers' Association at Pittsburgh.

of original legislation. It seems to me that the seven years experience with the Commission should now enable a reconsidereration of its powers with a view to giving it a more constructive function, subject, say, to review by the Attorney-General, by which it would remove the uncertainties from the minds of business men as to the line between the field of cooperation of promotion of production and trade in public interest, and the field of practice against public interest. There is nothing so destructive of business as uncertainty, and business has inherently enough uncertainty to deal with, without this one."

Burdens Lightened Thru Cooperation

The trade association has been responsible for bringing competing producers and their aids to a man-to-man contact, and not infrequently has been heard the statement, "we would have saved ourselves a lot of grief if we had known each other five years ago."

With the wearing off of the reserve of these men who previously had fought each other from the barriers of their advertising and sales organizations has come both a confidence and a desire to accomplish by cooperation those things difficult, if not impossible, to do alone. It is conceded that a well-informed competitor is better competition than one who guesses and keeps you guessing.

It is a safe prediction that the present Limitations of Armament Conference will not come up to our expectations in results unless they, too, find that there is only one way to play the game and that is with all the cards on the table and no mental reservations.

Cooperation Standardized Paving Brick

The most progressive associations today engage in cost educational efforts, not only as to production figures, but overhead expenses, depreciation, stores control, or perpetual inventory; in fact, in every direction leading to lower costs. They are also accomplishing tremendous savings and improving their efficiency and service in cleaning out unnecessary and unprofitable styles, sizes and kinds. The vitrified paving brick manufacturers, in cooperation with the engineers recently eliminated 55 out of 66 varieties and are confident that the remaining 11 can be still further reduced.

It was an open, above-board affair in which the Department of Commerce, the manufacturers, engineers, societies for municipal improvement, Department of Roads, Chamber of Commerce, U. S. A., and others concerned had a part. Owing to the excellent survey made and presented by the Secretary of the National Paving Brick Manufacturers' Association, the entire work was completed in a single day, and the industry and the public have been benefited beyond estimate.

We recently gave the Secretary of Commerce a list of 79 functions and services rendered by trade associations and this list did not include all by any means. Among the more modern and more progressive of these activities may be mentioned cost bureaus, statistical equipment for gathering and informing the industry of existing conditions, credit bureaus, national advertising or what may be better termed "educational advertising."

Worth of Association Advertising

I desire to refer briefly to this so-called "educational advertising" which is the outgrowth of a breadth of vision in some industries far in advance of what is usually expected, yet there is a psychology to it that is almost invaluable. The undertaking of it requires a maximum of faith and confidence, yet in supplying to the consumer as it does fundamental information and facts in a non-partisan, non-competitive way, it lays the best sort of information for the arguments and claims of superiority which may follow in competitive advertising.

I believe it is a mistake of much advertising in which an effort is made to convince only the consumers of a particular product. Changes are constantly occurring and in the evolution the city man may become a farmer and vice versa; consequently this fundamental education thru advertising is never lost. The manufacturers of farm tractors used the Literary Digest and I have heard most remarkable discussions of the respective merits of these tractors based largely on information gathered from that journal; so evidently their object of creating countrywide talk concerning their product was accomplished.

Educational Advertising Pays

That it pays to do something for the general good of the industry which may include your bitterest competitor or the fellow who absorbs all and will give nothing, has been proven so often that argument is unnecessary. I am not selling advertising of any character, but if I were, I believe I should like to get behind the educational advertising of an industry for I should have a feeling that I was not only serving the industries in a dollar and cents way, but contributing something to the information of the public and their benefit.

Right here it may be profitable to consider what a trade organization may or may not do—this is a question that has been, and is, bothering many associations—some are expecting that decisions of certain cases now pending in the higher courts may clear the atmosphere.

Aside from the necessity of submitting for judicial determination questions of technical violations of our trust laws, the matter of knowing what is right or wrong when engaging in cooperative or collective action does not seem to be one where legal light is necessary. On the basis of common sense we know that the law will not uphold monopoly or restraints of trade.

Hard to Distinguish Between Legal and Illegal Practices

The recent letter of a Federal Trade Commissioner holds that while cost accounting, educationally, is proper and desirable, yet costs used as a basis for affecting prices must not be determined by collective action, but, "Each must determine his own costs and fix his own margin." The principle enunciated here as to cost accounting may be carried into other activities as rather a safe guide.

Then in the matter of gathering and distributing information by an association to its members, the question arises, "When does such data cease to be information and become suggestive or carry with it direction contrary to law?" Here the important factor is intent, which no participant to an unlawful understanding or agreement can be ignorant of.

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FEDERAL AID IN HIGHWAY BUILDING

Some idea where the money appropriated by Congress for aid in the building of highways has gone can be gained from a notice recently issued by the Department of Agriculture. This bulletin states that "nearly 36 per cent. of the Federal-aid funds, or $75,600,279.30, went into the construction of 4,653.6 miles of high grade concrete roads. Next in size were total appropriations of $47,192,895.41 Federal-aid funds applied to the building of 10,043.5 miles of gravel road, at a total cost of $104,614,066.71.

"Toward the construction of brick roads, of which 444.6 miles were built, Federal-aid was available to the extent of $6,925,482.13."

This bulletin, altho sent out by the U. S. Department of Agriculture, sounds almost like a press notice for concrete. It was distributed to the delegates at the convention of the Portland Cement Association, held recently. The following figures brought out at this convention are interesting: Money spent on improved roadwork from 1916 to November, 1921, for concrete over $184,000,000 and for brick, over $22,000,000.

NO FREIGHT REDUCTIONS BEFORE SPRING AT EARLIEST

Quite frequently we hear reports, supposed to emanate from reliable sources, to the effect that a reduction in freight rates on coal is going to be made in the very near future. The careful reader of Washington news dispatches can readily see the absurdity of such reports.

As long as general freight reductions are under consideration by the Interstate Commerce Commission, there is not the slightest probability of any reduction in coal freight rates. And from the course of procedure outlined by the commission it means that spring will be here before any coal reductions are announced.

The commission has adjourned its investigations of a general freight reduction until January 11. On that date or as soon thereafter as hearings are resumed, railway heads will continue their testimony. After they have finished, shippers in general will be given an opportunity to present arguments.

Commenting on the program of the commission, J. D. A. Morrow, vice-president of the National Coal Association, says in "Coal Review":

"This obviously means that no decision by the commission can be expected before the latter part of February. If allowance is then made for the time required for the railways to prepare tariffs and put them into effect under an order of the commission, it is clear that no freight reduction on coal shipments in the United States is to be expected short of next April.

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ANNOUNCE NATIONAL THRIFT WEEK

Benjamin Franklin's Birthday, January 17, marks the opening day of National Thrift Week, which everyone is urged to observe. The thrift campaign with its slogan, "Spend Time and Money Wisely," is a national drive to help people to get more out of their dollars, with special emphasis on the need of wise spending. Special significance has been attached to the different days as follows: January 17, National Thrift Day, (Benjamin Franklin's birthday) January 18, Budget Day; January 19, Life Insurance Day; January 20, Own Your Own Home Day; January 21, Pay Your Bills Promptly Day; January 22, Share With Others Day; January 23, Make A Will Day.

This thrift movement has received the enthusiastic endorsement of such prominent men as Adolph Lewisohn, chairman of the committee, Herbert Houston, financial editor World's Work, Homer L. Ferguson, former president U. S. Chamber of Commerce, Walter H. Head, Omaha, vice-president American Bankers' Association, J. J. Eagan and Clarence H. Howard of St. Louis.

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WE THANK OUR MANY FRIENDS

Every year at Christmas and the beginning of the New Year, Brick and Clay Record is the grateful recipient of many hearty greetings and expressions of good will. This year again our host of friends remembered us with their good wishes. We desire to express our appreciation for the cards sent us by the following: Shawmut Clay Manufacturing Co., Independence Paving Brick Co., The Minter System, Rochester Clay Products Co., Geijsbeek Engineering Co., Los Angeles Pressed Brick Co., Farrar Advertising Co., Meyer News Service, Inc., Schofield-Burkett Construction Co., C. A. Hoppin & Co., Clippert Brick Co., Evans Pipe Co., U. S. Brick Co., E. C. Howard, manager Columbus Fire & Face Brick Co., Bloomfield Brick Co., A. P. Green Fire Brick Co., Clay Products Association, Eastern Paving Brick Manufacturers' Association.

Very attractive and useful calendars have been received from the Gaw-O'Hara Envelope Co., E. M. Freese & Co., The Crume Brick Co., Roessler & Hasslacher Chemical Co., Alberto A. Rodriguez, Monterrey, N. L., Mexico, and the Cannelton Sewer Pipe Co.

Brick and Clay Record is also indebted to the Bonnot Co. for a pocket notebook and calendar; to W. H. McCarthy for a very fine desk calendar, and to the Clippert Brick Co. for a very beautiful and handy bronze scratch padholder.

The knowledge, which these remembrances bring, that Brick and Clay Record has a host of friends, creates a fine feeling and we desire again to express our sincere appreciation for all the tokens of friendship received.

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A CORRECTION.

We desire to make a correction. In the issue of December 27 there appeared an item stating that the National tile plant at Anderson, Ind. was building two new kilns 14 feet wide and 35 feet high. These figures are wrong, and the item should have given the dimensions of the kiln as 35 feet in diameter and 14 feet high.

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COAL PRICES IN VARIOUS FIELDS

Late quotations in various coal markets taken from the Black Diamond of December 31 are as follows:

Southern Illinois, including Saline, Franklin and Williamson counties, domestic sizes, $3.10 to $4.05; mine run, $2.75 to $3.40; screenings, $1.85 to $2.85; steam size on contract, $2.60 to $2.85.

Indiana fields, prepared sizes, $3.25 to $4; mine run, $2.25; screenings, $1.60 to $1.75.

Central Illinois, prepared sizes, $3.25 to $3.50; mine run, $2.50 to $2.75; screenings, $1.75 to $2.25.

Peoria district, prepared sizes, $3 to $3.50; mine run, $2.75; screenings, $1.60 to $2.25.

Spring Valley six inch chunks, $4.50; on contract, $4.25; wash screenings on contract, $3.85.

Quotations on Western Kentucky lump coal are $2.60 to $3.25 a ton with the bulk moving at $2.75 and $3 a ton. Mine run, $1.75 and $2.25; screenings, $1.60 and $1.75. Harlan is asking $3 and $3.50 for lump; egg, $2.25 and $2.40; mine run, $1.50 and $1.75; screenings, $1.25 and $1.50. Hazard, lump, $2.85 and $3; egg, $2.00 and $2.25; mine run, $1.50; screenings, $1.25. West Virginia quotations show lump, $2.65 and $2.85; egg, $2 and $2.25; mine run, $1.30; screenings, $1.25.

In the Columbus market Hocking lump is $2.75 to $3; Hocking mine run $2 to $2.50; Hocking nut, pea and slack, $1.25 to $1.50; f. o. b. mines.

At Philadelphia pool No. 1 is offered at $2.75 to $3 net ton, f. o. b. mines. Pool No. 9 commands about $2 to $2.40; pool No. 10, $1.75 to $2; and pool No. 11, $1.50 to $1.75, f. o. b. mines.

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C. & E. I. MAY DISCONTINUE COAL ROAD

With notification that the C. & E. I. plans the complete abandonment of the Indiana coal road from Brazil to Momence, the National Fireproofing Co. and the American Sewer Pipe Co., of Brazil, and two large clay plants at Mecca will be entirely cut off from railroad service unless some plan is made to save the tracks from Mecca south to the Michigan division of the Pennsylvania Railroad. The C. & E. I. will maintain the Otter Creek branch on which is situated the large plant of the Brazil Clay Co. and a number of valuable mines in that territory.

How to Use the Post Drill Press

Another One of the Series of Articles Regarding Best Practices in Handling Machine and Repair Shop Equipment

By G. H. Radebaugh

Asst. Manager Shop Laboratories, Dept. of Mechanical Engineering, University of Illinois

REPAIRS on broken castings and damaged frame work of power clay plant equipment will generally call for drilling of holes for fastening the patch. This type of repair work is only one of a good many repair jobs done in the clay plant that require drilling. When repairing clay machinery, it will be found that several types of metals were used in their construction. Soft and hardened steel, cast steel, cast iron, bronze, brass, malleable iron, and aluminum are all used in the construction of equipment. To get the most out of a drill press, the drilling qualities of these metals should be understood. This makes it possible to do repair work on all parts of the machinery.

Several types of power and hand drilling machinery are used by tradesmen when doing repair work. It is important for the clay plant repair man to become acquainted with these tools, —it makes the planning and completion of a job much easier. Styles of these drills are shown in Plate 1.

Hand Drill Useful Tool

Use of Hand Drill. The hand drill is one of the most useful tools in the repair shop for drilling holes up to one-quarter inch diameter. When drilling holes of small sizes, the drill must be driven at a high speed to prevent the drill point from breaking. Many hand drills are supplied with a set of twelve drill points, which are held when not in use in the wooden handle. This type of drill is much better for small drilling than the combination post drill, as a greater drill speed can be obtained and the feed pressure more easily controlled. The advantage of this drill lies in the fact that it can be brought to the object, whereas the work must be brought to the post drill.

When and How to Use the Breast Drill

The Breast Drill. When it is impossible to get the job to the combination post drill when drilling holes ¼ to ⅜ inch size, the breast drill is used. If holes larger than ¼ inch are being drilled to any depth in cast iron or soft steel, a ⅛ inch hole should be drilled first with the hand drill. This operation makes drilling with the breast drill much easier. A spirit level is located on this drill to assist the operator in drilling straight holes. When making holes larger than 5/16 inch, considerable pressure must be applied to the drill to make it cut. The Armstrong Packer Ratchet drill is designed for the larger sizes of drills. A brace is provided to support the ratchet and drills, the pressure being applied by the threaded nut on the top of the ratchet.

When to Use Chain Drill

The Chain Drill. When drilling holes in pipe work, and in fact any job where a chain can be passed around the work, the chain drill attachment is used. It is driven by an ordinary carpenter bit brace. The feed to the drill is obtained by the screw arrangement which tightens against the chain. This tool will be found useful in drilling holes ranging from 5/16 to ⅝ inch.

Many styles and sizes of post drills are on the market, but the one provided with a hand and power drive with automatic feed will be found as effective as any. When it is not necessary for the average shop to be provided with the best of these post drills, a medium priced machine ($13 to $16) will give good service.

To make it possible to get the best service from the post drill press, a few drills and tools must be provided. Plate 2 shows several such

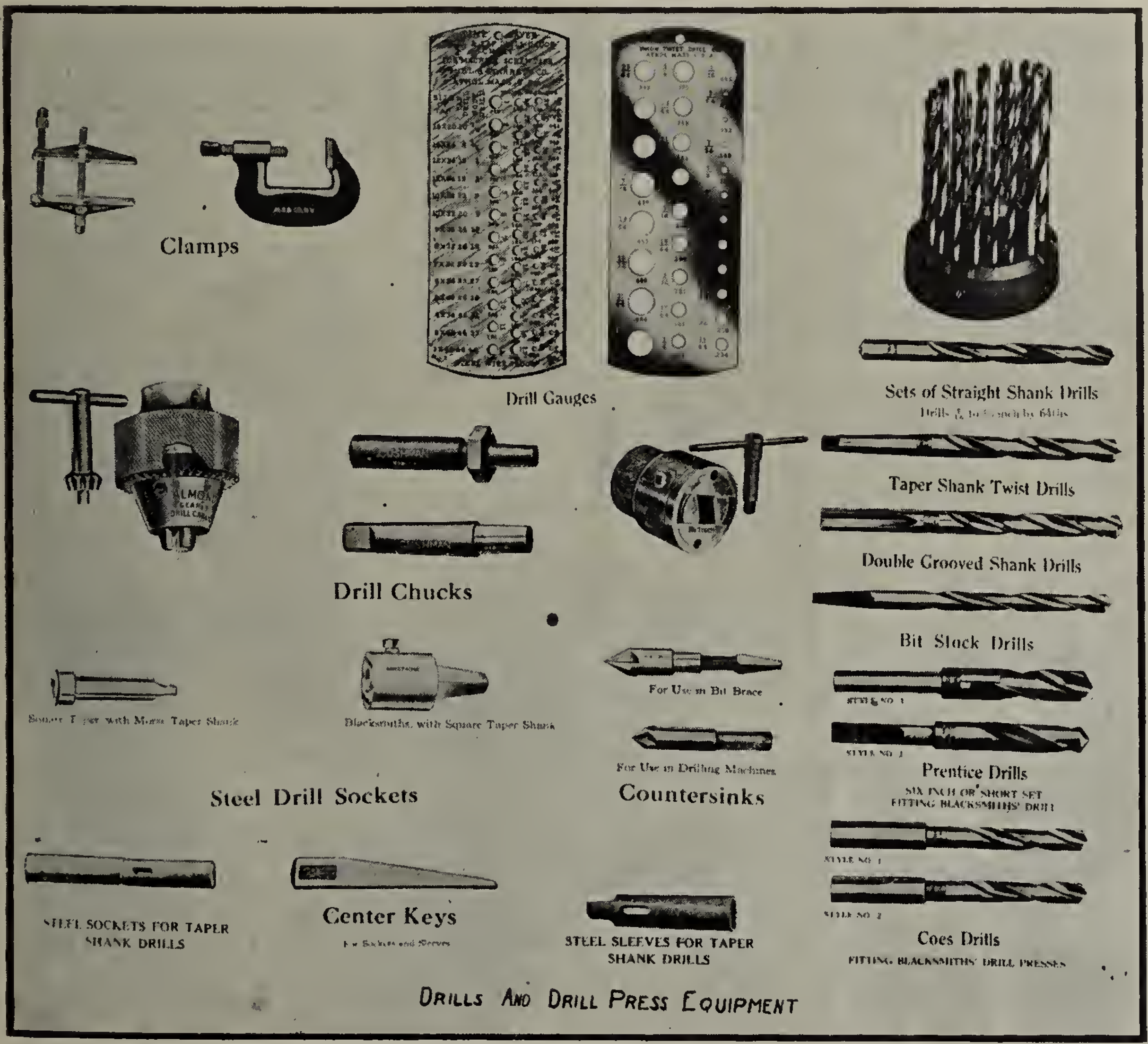

Clamps
Drill Gauges
Sets of Straight Shank Drills
Taper Shank Twist Drills
Double Grooved Shank Drills
Drill Chucks
Bit Stock Drills
Blacksmiths, with Square Taper Shank
For Use in Bit Brace
For Use in Drilling Machines
Countersinks
STYLE NO. 1
STYLE NO. 2
Prentice Drills
SIX INCH OR SHORT SET FITTING BLACKSMITHS' DRILL
Steel Drill Sockets
STYLE NO. 1
STYLE NO. 2
STEEL SOCKETS FOR TAPER SHANK DRILLS
Center Keys
For Sockets and Sleeves
STEEL SLEEVES FOR TAPER SHANK DRILLS
Coes Drills
FITTING BLACKSMITHS' DRILL PRESSES
DRILLS AND DRILL PRESS EQUIPMENT

Plate 2.

tools. If the shop is provided with this equipment, the heaviest or most delicate drilling job should not be too difficult. Post drill presses of different design require drills with special shanks. Care should be exercised when ordering drills to be sure that they fit the press for which they were ordered. Notice the shank design on the Coes Drill and the Prentice Drill. The other four styles are standard, but they require chucks or holding sleeves, and are not commonly used on this type of drill press. The taper shank drill is held in the drill press spindle with the steel sleeve. This is the type of drill used in most of the commercial shops. The straight shank drill is held in a chuck. They come in sizes from number 60 on up. It is not good practice to use straight shank drills larger than one-half inch. Chucks are provided with a shank that fits into the drill press spindle.

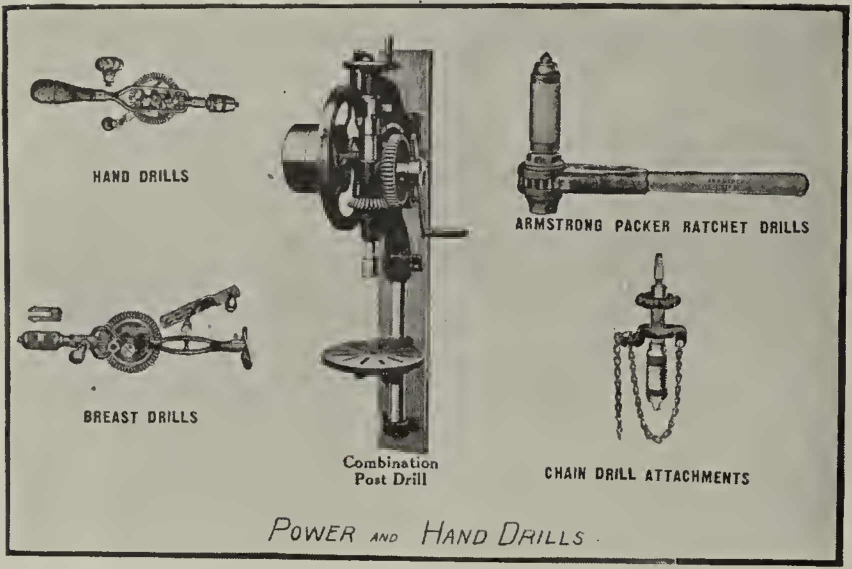


Plate 1.

Use Straight Shank Drills

The straight shank drills should be used in the clay plant. Justification for recommending the use of the straight shank drill up to one-half inch for the clay plant repair shop is the large range of drill sizes for taps. The cost of this drill is also lower. If the repair shop is going to drill and tap holes for machine screws, such as found on power equipment, it is obvious that the correct sized drills must be on hand. The sizes of screws are somewhat confusing, as there are several standards existing which makes the task of replacing screws on repair work many times an unpleasant and unprofitable job. To explain how the size of medium screw is gauged and the drill chosen for the tap we can remove a screw from a job and by noting it in the drill tap gauge as shown in Plate 2, it is found it fits in hole. On referring to the machine screw list we find this is the body size for a number 12x24 screw, meaning number 12 size and 24 threads to the inch, requiring a tap drill number 15. This means if this job is to be done a straight shank drill, as shown in the drill black set, must be supplied, as these sizes are not made with the special shanks.

How to Measure Drills

These drills are sized in numbers ranging from number 1 to 60 and are sized to fit all standard machine screws. A very simple and convenient way of measuring these drills is by using the L. S. Starrett drill and tap gauge, the same gauge used to determine size of screw, tap drill, and body drill. Notice the sizes of machine screws and the tap drill sizes marked on this gauge. A drill used to drill a hole for tapping is called a tap drill. Another very useful tool is the faction drill gauge. This is used to measure drills from 1/16 to ½ inch by 1/64 inch. These gauges are not expensive and may be found in the tool box of the commercial mechanic.

Set Screw Drill Spindle Dangerous

Flat head screws require a countersunk hole, the countersinks shown are provided with a straight shank for a drill chuck and a bit brace shank for the carpenter brace. For light countersinking the breast drill is oftentimes used to drive the countersink.

Tap Drill Sizes

for United States Standard

Size of Tap	Threads per Inch	Nearest Commercial Drill Size to produce 75% depth of thread	
		Inch Decimals	Commercial Designation
¼	20	.201	No. 7
5/16	18	.258	F
⅜	16	.314	5/16
7/16	14	.368	U
½	13	.425	27/64 in.
½	12	.418	27/64 in.
9/16	12	.481	31/64 in.
⅝	11	.536	17/32 in.
11/16	11	.599	39/64 in.
¾	10	.652	21/32 in.
13/16	10	.715	23/32 in.
⅞	9	.766	49/64 in.
15/16	9	.829	53/64 in.
1	8	.878	⅞ in.
1 1/16	8	.940	15/16 in.
1 ⅛	7	.986	63/64 in.
1 3/16	7	1.048	1 3/64 in.
1 ¼	7	1.110	1 11/64 in.
1 5/16	7	1.173	1 3/16 in.
1 ⅜	6	1.216	1 7/32 in.
1 ½	6	1.337	1 11/32 in.
1 ⅝	5½	1.448	1 29/64 in.
1 ¾	5	1.555	1 9/16 in.
1 ⅞	5	1.680	1 11/16 in.
2	4½	1.783	1 25/32 in.

Table 1.

Drill Sizes for Pipe Taps

Size Tap Inches	BRIGGS STANDARD		BRITISH STANDARD	
	Thread	Drill	Thread	Drill
⅛	27	21/64	28	5/16
¼	18	27/64	19	7/16
⅜	18	9/16	19	9/16
½	14	11/16	14	23/32
⅝			14	25/32
¾	14	29/32	14	29/32
⅞			14	1 1/16
1	11½	1 ⅛	11	1 5/32
1¼	11½	1 15/32	11	1 ½
1½	11½	1 23/32	11	1 23/32
1¾			11	1 31/32
2	11½	2 3/16	11	2 3/16
2¼			11	2 13/32
2½	8	2 9/16	11	2 25/32
2¾			11	3 1/32
3	8	3 3/16	11	3 9/32
3¼			11	3 ½
3½	8	3 11/16	11	3 ¾
3¾			11	4
4	8	4 3/16	11	4 ¼
4½	8	4 11/16	11	4 ¾
5	8	5 ¼	11	5 ¼
5½			11	5 ¾
6	8	6 5/16	11	6 ¼

Table 3.

Types of Drill Chucks. In Plate 2 three types of drill chucks are shown. The two chucks on the platen of the drill press can not be used in the post drill unless the spindle has been bored out so the taper chuck shank will fit. On this machine this has been done and the little time consumed on this operation has been worth while. The practice of having a set screw on the spindle of a drill press is obsolete and is very dangerous. A very tragic story could be written on the many accidents the set screw on drill spindles has caused.

Table of Decimal Equivalents

Of 8ths, 16ths, 32ds and 64ths of an inch

8ths.

1/8 = .125
1/4 = .250
3/8 = .375
1/2 = .500
5/8 = .625
3/4 = .750
7/8 = .875

16ths.

1/16 = .0625
3/16 = .1875
5/16 = .3125
7/16 = .4375
9/16 = .5625
11/16 = .6875
13/16 = .8125
15/16 = .9375

32ds.

1/32 = .03125
3/32 = .09375
5/32 = .15625
7/32 = .21875
9/32 = .28125
11/32 = .34375
13/32 = .40625
15/32 = .46875
17/32 = .53125
19/32 = .59375
21/32 = .65625
23/32 = .71875
25/32 = .78125
27/32 = .84375
29/32 = .90625
31/32 = .96875

64ths.

1/64 = .015625
3/64 = .046875
5/64 = .078125
7/64 = .109375
9/64 = .140625
11/64 = .171875
13/64 = .203125
15/64 = .234375
17/64 = .265625
19/64 = .296875
21/64 = .328125
23/64 = .359375
25/64 = .390625
27/64 = .421875
29/64 = .453125
31/64 = .484375
33/64 = .515625
35/64 = .546875
37/64 = .578125
39/64 = .609375
41/64 = .640625
43/64 = .671875
45/64 = .703125
47/64 = .734375
49/64 = .765625
51/64 = .796875
53/64 = .828125
55/64 = .859375
57/64 = .890625
59/64 = .921875
61/64 = .953125
63/64 = .984375

Table 2.

The post drill should be clamped to the post or wall with four 3/8 inch carriage bolts with washers. It should be located so the chuck will be on the level with the operator's chest; this permits free operation.

Proper Grinding of the Drill is Essential

Few operations or tools in a shop are more important than the grinding or sharpening of drills. To secure satisfactory performance, the cutting edges must have a proper and uniform angle of 59 degrees, with the longitudinal axis of the drill. They must be of exactly equal lengths, and the lips of the drill sufficiently backed off or cleared. If this clearance is insufficient or imperfect, the drill will not cut. A very simple method of determining the clearance is to set the point of the drill on a flat surface, holding a rule parallel with the drill. By revolving the drill its clearance can be checked, as well as the height of the cutting lip, which should be equal. When grinding a drill, support the drill on the index finger, as shown in Fig. 2. By doing this a grinding balance and position is more accurately maintained. It is a good plan to have a drill in the shop that has never been reground for use as a sample to gauge by. Care must be exercised when grinding not to draw the temper on the drill. To prevent this, it is always a good policy during the grinding operation to place the drill in water to cool it. Endeavor to preserve the original form of the drill. It has been ground by the manufacturer to insure rapid and satisfactory work.

Drilling Brass and Babbitt

Many times when a drill has been considerably shortened thru use, the center shows thicker, which causes the drill to work hard. Drills are made with the center thicker toward the shank to strengthen the drill. To overcome this, the center should be thinned, care being taken to remove equal amount of stock on each side, so the point will be kept central.

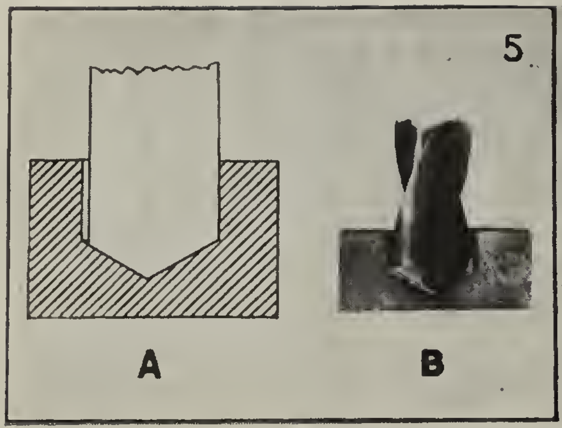
Drilling brass and babbitt requires the changing of the drill lip clearance angle, often an operator finds difficulty in drilling these metals. The angle of keenness causes the drill to dig into the work. This crowds the drill to the point of jerking the work from the platen or throws the belt. To remove this

Tap Drill Sizes

S. A. E. Standard

Size of Tap	Threads per Inch	Root Diameter	Nearest Commercial Drill Size to produce 75% depth of thread	
			Inch Decimals	Commercial Designation
1/4	28	.2036	.219	No. 2
5/16	24	.2584	.272	I
3/8	24	.3209	.334	Q
7/16	20	.3726	.388	W
1/2	20	.4351	.451	29/64 in.
9/16	18	.4903	.508	1/2 in.
5/8	18	.5528	.570	14.5m/m
11/16	16	.6063	.626	5/8 in.
3/4	16	.6688	.689	11/16 in.
7/8	14	.7822	.805	13/16 in.
7/8	18	.8028	.820	13/16 in.
1	14	.9072	.930	15/16 in.
1 1/8	12	1.0168	1.043	1 3/64 in.
1 1/4	12	1.142	1.168	1 11/64 in.
1 3/8	12	1.2668	1.293	1 19/64 in.
1 1/2	12	1.3918	1.418	1 27/64 in.

Table 4.

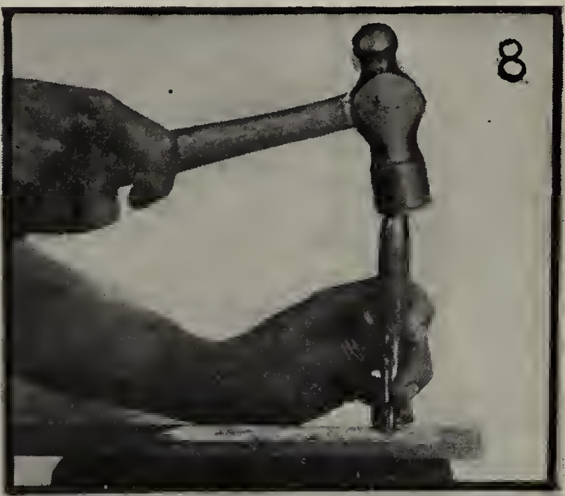


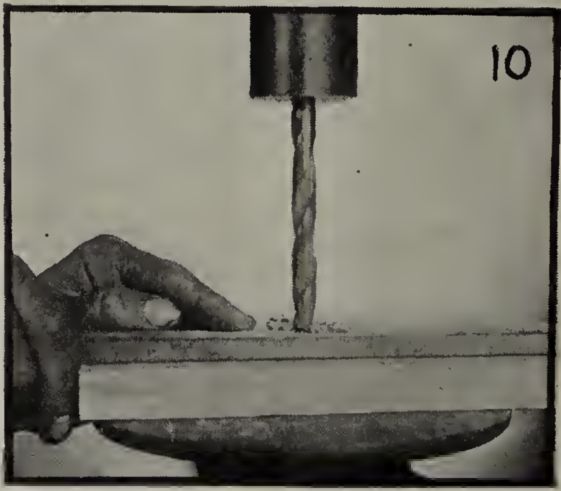
condition, eliminate the angle of keenness on the drill lip by grinding the lip edge parallel with the axis of the drill, as shown in Fig. 3. Notice the grinding is being done on the side of the wheel and not on the face. It must be understood that if the drill after being ground for brass is to be used for steel or iron drilling it must be reground, as explained in Fig. 2. When grinding a drill for brass, a very close inspection should be made after the grinding operation. Notice in Fig. 4 how the cutting edge of the drill looks flat. A flat surface gives the scraping action which eliminates all the trouble when drilling soft metals.

Results of Improper Grinding

Results of improper grinding are shown in Fig. 5. If a drill has been ground with the point in the center, but the angles of the cutting edge are different, the drill will bind on the side of the hole opposite to that side of the point which is cutting. This results in too large a hole and all the cutting is done by the one cutting edge, as shown in "A," Fig. 1. If the drill is ground with equal angles, but with the cutting edges of different lengths, the hole will be drilled too large, as shown in "B."

When making repairs on machines it often times is necessary to join broken castings together with steel brackets or straps. These can be supplied from the plant forge. One of the common difficulties in making this type of repair is the inaccurate drilling of the holes, which makes it impossible to insert bolts or cap screws without filing out holes. This indicates that not enough care was exercised in locating the drilling centers.





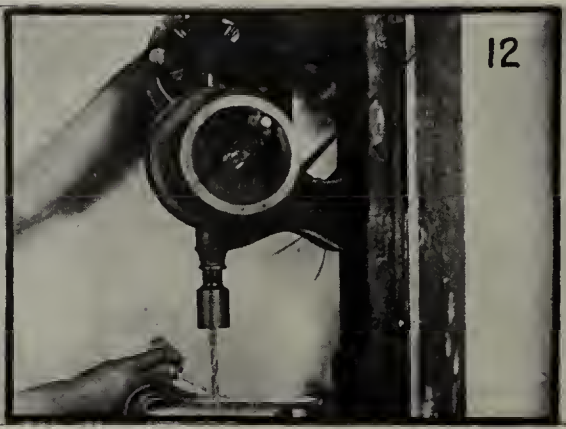
Locating the drill center for a bracket job, such as shown in Fig. 6, can be made a short job by following the practice of the trained mechanic. If the holes have not been previously drilled in the bracket, this should be done. Good judgment must be used in the proper location of these holes in relation to the part being patched. The surface on the job where this drilled bracket is to be located is well chalked with starch or carpenter's chalk.

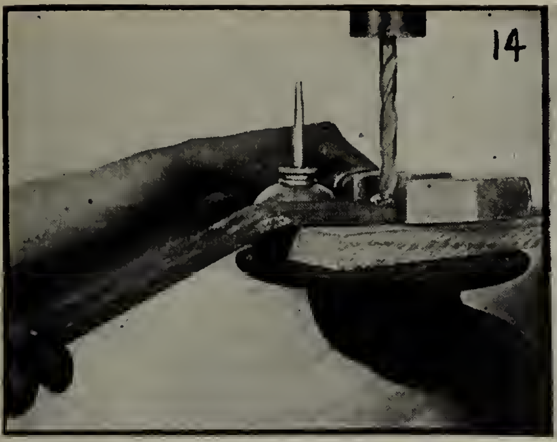
The bracket is next put in place, and with a scriber or scratch awl the outline of the holes are made on the chalked surface, as shown in Fig. 7.

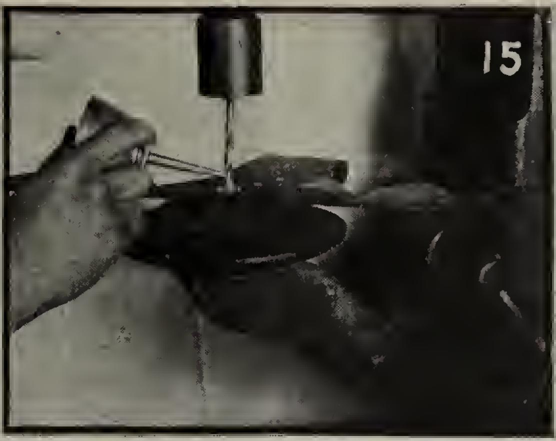
Use Center Punch To Mark Hole

If these holes are going to line up with the holes in the bracket, it is obvious that the hole must be drilled in the center of this layout. Too many times jobs of this kind are not properly prepared for accurate drilling. Never drill a hole in a job unless the location desired for the hole is established by a center punch mark. The center punch is shown in use in Fig. 8. The finished layout is shown in Fig. 9.

This job is now ready to be drilled, but only to a depth which will permit checking the drilling center with the layout. It is very common for drills to "run" or change the drilling center from the original layout. This is the cause of so many difficulties when fitting bolts or screws in the drilled holes. The holes do not line up, so it becomes necessary to file until a fit is made. To guarantee a good alignment of holes, it is necessary to keep the drill within the layout circle. To do this the drill should be fed into the work to a depth of half







the height of the drill point, as shown in Fig. 10. After this is done, the drill is lifted from the work and the drilling center is compared with the layout circle. If the drill has "run", it will show up very clearly, as the partially drilled hole will be to one side of the layout circle.

Centering Drill

Our problem, then, is to bring the drilling position back to the correct center. This is done as shown in Fig. 11. A round nose chisel is used to change the center. This operation is known as drawing a hole. A hole cannot be drawn if the drill has penetrated the metal to full diameter of the drill. It has been stated that the drill should only be fed into the work half the depth of the drill points. In doing this several attempts can be made in the drawing operation before the hole is drilled to full diameter. After the drilling position has been drawn to the center of the layout circle, the hole is ready to be drilled. In reviewing this drilling job we have followed the trade practice of the machine. Lay out the hole, from template or drilled bracket, using scriber or scratch awl, the centering of the job with the center punch, the drilling of the hole to check for positon. If the drill "runs," the correct position is regained by using the round nose chisel or gauge. With the drilling position correct, the job is now ready to drill.

Speed and Feeding of Drills

The speed and feed of drills used in repair drilling can be determined by actual practice, exercising good, sound judgment. In commercial shop practice when drilling steel a peripheral speed of 30 feet a minute for cast iron, 35 feet for brass, 60 feet using a feed of .004 to .007 inch per revolution for drills larger than ½ inch diameter is the prevailing practice. Another example of speeds for drilling is the comparison of the ¼ inch drill revolving at a rate of 611 R. P. M. and the ¾ inch drill revolving at a rate of 203 R. P. M. The speed will give the peripheral speed of 40 feet per minute.

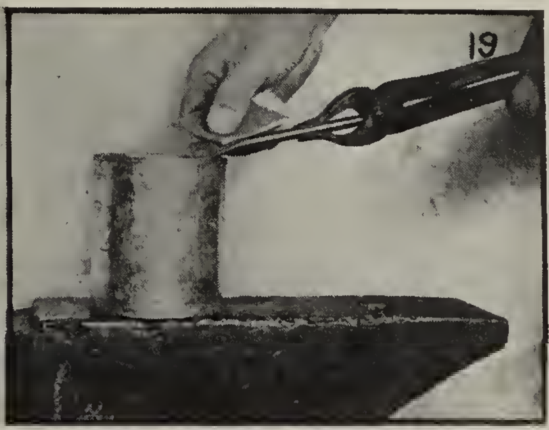
Clamping Jobs on Platen of Drill Press

Often the work done on a drill press is large enough so it will not move under the action of the cutting drill. However, many jobs are drilled that necessitate clamping the job to the platen of the drill press to insure accurate drilling and prevent the breakage of drills. One of the most convenient clamps is the malleable iron screw clamp shown in use on the drilling job in Fig. 12. Clamps taken from old clothes ringers make a very serviceable part for drill press work. Notice on this job a block of wood being used under the job. This protects the drill press platen. Another scheme that is used on short piece of stock being drilled is shown in Fig. 13. Many times pieces like this one are held with the hand, but this is very bad practice, for if the drill would catch there is danger of injury to the hand. In drilling small holes it is understood the job could be held by hand, but it is the experience of the tradesman to always clamp a job when drilling holes larger than 7/16 inch. Many drills are broken and hands injured by drilling a bent bracket without holding same with a wrench or clamp. In Fig. 14 a typical job is shown. This type of job is known to the tradesman as one of the most dangerous of the drilling operations. It is better, then, to prevent the breakage of drills that all bracket jobs should be securely clamped to the platen, or the job held firmly with the monkey wrench.

Drilling Tempered Steel, Aluminum and Glass

Hardened steel may be drilled by using turpentine or kerosene; soft steel and wrought iron, lard oil or machine oil; malleable iron, lard oil or machine oil; aluminum and soft alloys, kerosene. Cast iron should be worked dry.

In Fig. 15 a hardened steel job is shown on the drill press, a ⅜ inch hole being drilled in the hardened blade. The drilling of hard metal is facilitated by using turpentine as a cutting compound and by grinding off the sharp angles of the cutting edge of the drill, as explained for cutting brass and soft metals. This permits a heavy feed without chipping the edge. Practice will prove that somewhat slower speed of the drill will be required for drilling hardened steel than the speed used for drilling soft steel. In drilling holes in glass, use a brass pipe, having an outside diameter equal to the size hole required. This pipe should have a peripheral speed of 100 feet per minute. Use carborundum 80 to 100 grit or a valve grinding compound with oil. This mixture should be placed between the end of the pipe and the glass. The glass must be supported by felt or rubber cushions not much larger than the hole to be drilled. When filing glass use turpentine. Holes up to ½ inch in diameter can be drilled in glass with a flat drill properly



hardened. Use a mixture of turpentine and camphor for the lubricant.

Making a Flat Drill to Fit the Job

Machined spots around a hole on machine frames are provided to give a true flat surface for the head of the screw. This operation is done with the counter boring tool shown in use, Fig. 16. This tool is provided with a pilot which guides the tool. Sizes of counter bores are gauged by the diameter of the surface it will smooth up and the size of pilot. This tool has a shank that fits the drill chuck and is driven at about the same speed as a drill of equal size.

It sometimes happens that a hole must be drilled and the proper size drill is not on hand. A shop that is equipped with a forge can make up the size drill required. It is very common practice for a commercial shop to make a flat drill to take care of some drilling job that requires special sized drills. Flat drills must be made from high carbon steel. The stock can be forged to shape, as shown in Fig. 17. Care must be exercised in working the steel at the correct temperature. The diameter of the stock regulates the range of the size drill that can be made.

Making a Drill

The newly forged drill is next filed to size, checking the size with the caliper, as shown in Fig. 18. The angles are the same as the twist drill. It will be an advantage to have a twist drill by the job to check the angles and cutting edge during the filing operation. The next operation is the tempering of the newly shaped drill. When tempering for steel drilling, heat drill point to a cherry red and dip in water, enough heat should be left in the shank of the drill to draw the temper. The point can be polished with emery cloth, Fig. 14, to make the temper color more visible. Quench when the temper color shows up a light straw. These are the same operations followed when tempering a cold chisel with the exception of the temper color, which is a blue.

If a flat drill is used for drilling glass, heat to a cherry red and harden in sulphuric acid.

The drill charts A, B, C, D shown in this article will be found useful around the drill press and in the plant shop. This is the type of information the commercial shop man has around him to help solve his drill press problems. These charts give an opportunity for the clay plant repair shop to take advantage of this information.

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ONE PLANT USES 650 CARS OF BRICK

The use of by-product coke oven gas for domestic and industrial purposes was given a big impetus recently when the large new plant was opened for the Peoples Gas Light & Coke Co., of Chicago. The plant consists of 100 by-product coke ovens built by the Koppers Co., of Pittsburgh, Pa., arranged in two batteries of 50 ovens each. The ovens are of the combination, triangular flue type, 39 feet 6 inches between doors, 15½ inches average width and 11 feet 0 inches high, taking 13⅓ net tons of coal per charge. The normal carbonizing period is 16 hours from charging to charging. The plant has a daily capacity of 2,000 net tons of coal and will produce each day 14,000,000 cubic feet of coal gas, 1,350 net tons of coke, 24,000 gallons of tar and 55,000 pounds of ammonium sulphate.

As usual the amount of clay products entering into the construction of this plant was quite large, in this case totaling 26,000 tons. The refractory shapes of silica brick were furnished by the Harbison-Walker Refractories Co., of Pittsburgh, Pa., the refractory shapes of fire clay by the Chicago Retort & Fire Brick Co., the face and shale brick by the Wisconsin Lime & Cement Co., and the common brick by the National Brick Co., all of Chicago.

The coal used comes from Eastern Kentucky, as this coal is considered the best by-product coking coal in the United States.

Thruout the entire installation provisions have been made for future extensions which will give the plant a capacity of 150,000,000 cubic feet of gas per day. The site of 600 acres makes possible a central gas making plant large enough to supply Chicago with gas for years to come.

CONVENTIONS IN PROSPECT

January 18 and 19—Ohio Drain Tile Association, Chittenden Hotel, Columbus, Ohio.

January 24—Kentucky Clay Products Association, Louisville, Ky.

January 23, 24, 25, 26, 27 and 28—National Brick Manufacturers Association, Claypool Hotel, Indianapolis, Ind.

January 25 and 26—Hollow Building Tile Association, La Salle Hotel, Chicago, Ill.

January 30, 31 and February 1—Common Brick Manufacturers Association, Hotel Statler, St. Louis, Mo.

February 7, 8 and 9—Canadian National Clay Products Association, Carls-Rite Hotel, Toronto, Canada.

February 15 and 16—Iowa Clay Products Manufacturers Association, Des Moines, Ia.

February 27, 28, March 1 and 2—American Ceramic Society, St. Louis, Mo.

DRAIN TILE MEN SET MEETING DATE

A meeting of the board of trustees and the traffic committee of the Ohio Drain Tile Association was held at the Chittenden Hotel, Columbus, January 2, with a large number present. It was reported that the Ohio Utilities Commission had turned down the application for reduced freight rates, but nevertheless most of the manufacturers of drain tile have made substantial reductions in their prices. It was decided to hold the annual meeting at Columbus, January 18 and 19, at the Chittenden Hotel. Business meetings will be held all day on the 18th and on the morning of the 19th. Officers will be elected. C. H. Hilty, of Ada, is president and J. C. Poling, also of Ada, is secretary of the association. The Columbus manufacturers will form a committee on entertainment.

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GOOD ROADS SHOW AT CHICAGO

Many new features will be found at the Thirteenth National Road Show, to be held at the Coliseum, Chicago, Ill., January 16 to 20. Indications are that the number of exhibitors this year will approach close to the 200 mark, and it is expected that all attendance records will be broken. The U. S. Bureau of Public Roads will have a mammoth exhibit covering 2,000 square feet of space, and will demonstrate in addition to everything exhibited heretofore, the best methods of choosing sites for new roads, as well as tests for road material, drainage and subgrades, and the effect of impact on both pavings and subgrades. The National Paving Brick Manufacturers' Association, Portland Cement Association, the Asphalt Association and other organizations of road material producers are cooperating in the arrangements for this show for the American Road Builders' Congress.

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

KAOLINS AND POTTERY CLAYS IN THE UNITED STATES

THE QUESTION of raw materials used in the pottery industry is no longer acute as it was during the war period, but still offers many opportunities for serious consideration. The old principle "Let the buyer beware," still applies to a very considerable extent, and this holds without incriminating the intentions of the seller. While in the steel and many other industries it has become the fixed custom to buy on specifications, such a procedure has been held to be impossible in the pottery trade, and it has been thought that no fixed requirements could be established for the purchase of clays, feldspars and other materials. It is true that reliance on purely chemical composition would indeed be misleading, but it is equally true that certain basic requirements, both chemical and physical, can be used to establish the value of the materials for specific purposes. In other words, it is not possible to arrive at specifications within a certain reasonable limit of tolerance. The adoption of such broad but definite specifications would indeed be most desirable on the part of the seller and the purchaser since they would afford protection to both parties and, furthermore, could be used to establish a legal standing in court, which, as far as our materials are concerned, is lacking almost entirely.

China Clay or Kaolin

In speaking of china clay we really refer to kaolin of the primary type, that is, clay still found associated with the parent rock from which it has been derived. Clays of this type have definite characteristics, such as a very white color in firing, imperfectly developed plasticity, and low strength in the dry state. The grain of these clays is coarser than that of the other types of clay of more recent geologic origin. The principal primary kaolins used by us are the English china clay, the North Carolina and the Delaware and Maryland kaolins. All other so-called kaolins purchased on this continent at the present time are secondary kaolins, that is, clays which have been washed away from the parent rock, and hence are finer-grained and not so pure as to color. For making high-grade ware of good color, it is absolutely necessary to have clays which are of a good, white color when fired. The ideal material for this purpose is undoubtedly the English china clay. Its fine color and remarkable uniformity make it the kaolin par excellence. In our tests of materials, we have found practically no variations to speak of from shipment to shipment, and the only thing that needs to be watched in connection with it is its water content. Such a clay when mixed with flint in the proportion of 1:1, by weight, has a transverse strength of about 35 pounds per square inch in the dried state, and when fired to cone eight an absorption of 24 per cent.

Editor's Note.—The following is the report of the Materials Committee to the United States Potters' Association at its annual convention held at Washington, D. C. The report was compiled and submitted by Dr. A. V. Bleininger, who is in charge of the research department of the Homer Laughlin China Co., East Liverpool. It is a splendid statement showing the situation of the pottery industry in this country regarding the supply of raw materials, what domestic clays can be used and to what extent the United States industry is dependent upon England.

Properties of American Kaolins

The strength of this clay may be judged by stating that the average semi-vitreous body has a transverse strength of 250 pounds per square inch in the dried state. A typical North Carolina kaolin, mixed with the above proportion of flint showed a dry strength of about five pounds per square inch, and an absorption of 25.5 per cent. at cone eight. The difference in dry strength is due to the fact that the English china clay is of much finer grain than the North Carolina kaolin, the latter consisting of very large particles of clay matter. This fact is in no way prejudicial to the American kaolin, and indeed this is a desirable feature, since the admixture of the coarser grains, with the much finer ones of the other clays results in a more compact and stronger structure. The unfortunate part connected with the North Carolina kaolins is the frequent presence of iron-bearing mica which is only partly removed by the lawn, the small yield of kaolin from the original rock, and the comparatively limited quantity found at the workings. It is undoubtedly true that the separation of mica from kaolin may be decidedly improved by several mechanical methods, but the difficulty as regards to the available amount of the crude rock and its low yield is a fundamental one over which we have no control.

Secondary Kaolins

The North Carolina kaolin at its best is an exceedingly white and fine material, but, unfortunately, we do not always get it in this condition. What has been said of the North Carolina kaolins applies largely also to the Delaware and Maryland materials. It is evident, therefore, that, as far as the primary kaolins are concerned, we are not in good shape in this country, and all the talk of chemical experts will not explain away this condition.

Let us now see what the conditions are with reference to the secondary, or the so-called plastic kaolins. The best examples are the clays from Florida and Georgia. As we have seen, these are much finer and more uniformly grained than the primary kaolins, a feature which is not altogether desirable.

This, in connection with the slightly-off color in the fired state, constitutes the principal objections to their use in larger quantities. Their uniformly fine-grained structure renders them sensitive in drying, due to the development of fine cracks, tho in this respect the Florida behave very much more favorably than the Georgia clays.

Florida Kaolins Show High Tensile Strength

We have found the transverse dry strength of Florida kaolin mixed with an equal part of flint to be as high as 250 pounds per square inch, while some Georgia kaolins under the same conditions showed only a strength of about 25 pounds. This is not due so much to the inherent weakness of the clays as to the development of the cracks and checks referred to. Some of the Georgia clays are more prone to show this defect than others. It should be realized also that this difficulty does not show when smaller amounts of this type of clay are used, nor when it is made up by other than the plastic molding process, such as dry pressing where the water content is low.

Furthermore, it is not at all improbable that by some preliminary cheap treatment it may ~~not~~ be possible to use larger quantities of these materials, which constitute deposits of enormous size. The efforts of our federal bureaus should be directed towards the utilization of these clays by means of some practical treatment, whether this be a pre-heating process, an electrical or chemical treatment. Such work would be of great economic importance to the industry.

Other Secondary Clays

There must be mentioned also two other kinds of secondary, white or light burning clays. The first kind consists of the so-called residue clays, resulting from the decomposition of limestone, which are found especially in Bollinger County, Missouri. These clays are fine grained, and contain a considerable amount of amorphous silica, a form of silica corresponding to the structure of French flint. These clays consist of about 50 per cent. of kaolin and 50 per cent. of this flint, the silica content being about 77 per cent. and the alumina content 19 per cent.

The firing color is a very good white. It is evident that with the use of such clays the flint content of the body would have to be reduced proportionately. It is interesting to note that in an old record book of Homer Laughlin, the writer found batches of compositions showing a certain amount of this clay had been used.

In some localities in Missouri it is quite probable that natural mixtures of this clay with another stronger and tougher clay are found, resembling ball clays in their properties. Some clays which have come from Missouri do indeed seem to possess the color of a secondary kaolin and some of the plasticity of a ball clay. The so-called kaolin found near Anna, Ill., is apparently of a similar origin, being the decomposition product of limestone.

Different Types of Secondary Clays

A second type of kaolin-like clay is that found in South Carolina, Alabama, Indiana, Nevada and Texas. These materials undoubtedly are secondary in character, but have been so compacted by natural processes that they must be ground before they develop plasticity. Altho this type of material is now being used for pottery making in California, it is not so familiar to us in this part of the United States. When ground fine these clays develop sufficient plasticity, and some of them have an excellent color. Their drying shrinkage seems to be comparatively low, but the firing shrinkage is high. In some cases they seem to assist in bringing about marked translucency, especially the Texas clays. From the commercial standpoint, however, the latter are out of the question, since surveys have shown that the amount of clean, white clay is negligible. There are large amounts of this hard variety of clay in Texas, but their high content of fluxes and poor color render them valueless.

Future Outlook for Domestic Kaolin

With a large and satisfactory supply of English china clay available it might seem foolish to speak of using domestic materials. As a matter of fact, it is of national concern to make ourselves independent of foreign raw materials of every kind if at all possible. It is evident that there is a sad deficiency in our supply of primary kaolins, the class to which the English china clay, the North Carolina, the Delaware and Maryland kaolins belong. If there were an ample supply of these materials our needs could be met, since, with the help of the Florida and Georgia clays, a suitable body could be built up. It would seem necessary, therefore, to push the exploration for kaolin in the Appalachian Mountains, particularly in the North Carolina district but also in Virginia. A geological and technical survey of the Appalachian territory has already been made by the U. S. Geological Survey and the Bureau of Mines, the results of which should soon be available. It is to be hoped that it will be possible to compute the approximate tonnage of such kaolins available.

Virginia May Have Kaolins

Similar work should be done in Maryland, Delaware and the New England States, Eastern Pennsylvania and other states having igneous formations. It is not unlikely, for instance, that kaolins may be found in Virginia which can be used, when subjected to proper washing treatment. There is also a chance that kaolin deposits of sufficient extent may be located in connection with the Laurentian rocks of the province of Quebec, Canada.

The second step looking towards the exclusive use of domestic materials would be the allocation of the secondary or plastic kaolins with particular reference to the Georgia deposits. This field is undoubtedly very large, and sections of it have not yet been explored. This work is now under way, and is being conducted by the Bureau of Mines in connection with large size tests dealing with different methods of washing and purification.

The third step should embrace the study of the hard, white-burning clays requiring grinding, principally those of South Carolina, Nevada, and perhaps Alabama. Our knowledge concerning these materials is quite incomplete, and we should learn the properties of these materials in our bodies.

Domestic Clays Not Entirely Unsuitable

We cannot and should not dismiss these clays as being unsuitable. The work done some years ago under the auspices of the United States Potters' Association with the Bureau of Standards showed quite distinctly that bodies of very good appearance could be made with the introduction of a certain percentage of these clays. We know that the deposits in question are very large.

The fourth step should include work dealing with the white residue clays, such as those from Missouri and Arkansas, and the plastic clay derivatives of these materials. Exploitation on a commercial scale is already under way.

It is obvious that in the consideration of all of these clays the probable extent of the deposits is the one vital factor, and that no time should be wasted on locations where formations are comparatively small pockets, or where the weathering of the dykes is evidently superficial or shallow. By following this general rule the work of such a clay survey should be reduced to practical limits.

Ball Clays

The English ball clay situation has been greatly eased up, as we all know, and the supply is adequate. In selecting ball clays for our specific purposes, we have found it useful to adopt the following simple classifications:

1. Black or dark ball clays, containing considerable organic matter, inclined to be sticky in the plastic state but strong in the dried condition, and used principally for the purpose of securing good dry strength. Vitrifying below cone eight. The transverse dry strength of the 1:1 clay-flint mixtures is above 475 pounds per square inch. If used exclusively this type of clay may cause pulling out in jiggering or sticking to the mold. The high carbon content requires caution in the early part of the bisque fire, as far as thick ware is concerned, since black-coring may result. Usually vitrification is reached below cone seven. These clays usually fire to a good light color.

2. Black or dark ball clays, having the same physical properties as Class 1, with the exception that they vitrify above cone eight, but not above cone ten.

Clays Can Be Mixed Successfully

3. Blue, gray or yellowish clays, much lower in organic matter than the black clays. Possess excellent plasticity and show none of the stickiness of the first two divisions. Hence, they do well in conjunction with the black clays as they supply fine jiggering quality. The transverse, dry strength of 1:1 clay-flint mixtures is between 350 to 400 pounds per square inch. Vitrification is below cone eight. The firing color is more yellow than that of the black clays. Black-coring does not occur readily.

4. Clays similar to those of class 3, but vitrifying above cone eight, but not above cone ten.

5. Clays similar to Classes 3 and 4 in plasticity, but lower in dry strength, which may vary from 250 to 350 pounds per square inch. The firing color is usually yellowish, especially under the glaze, but bleaches as the bisque fire is raised. These clays do not vitrify below cone eleven-twelve, and hence are more suitable for vitreous than semi-vitreous ware.

Ball Clays Should Vitrify

In general, we desire ball clays to practically vitrify in the bisque fire since more refractory clays tend to produce a more open and less strong body, which is inclined to craze. It is obvious also that we must not use ball clays which overfire at the bisque temperature employed, and no clay which fires to a gray color. We can neutralize the cream-colored and yellow clay with cobalt, but in the case of gray-firing materials the oxide only makes matters worse and imparts to the ware a dingy look.

The appearance on the market of a white-burning clay from Missouri having some of the properties of a ball clay, and possessing a transverse strength in the dried state, and mixed with flint in the proportion of 1:1 of about 260 pounds per square inch, is interesting and worthy of investigation. This clay when fired to cone eight was found to show an absorption of 3.2 per cent.

Feldspar Situation Easier

The feldspar situation has likewise become eased up considerably, both with reference to supply and quality. During the latter part of 1920 feldspars showing more than 72 per cent. of silica were received, but the quality has been improved, as is shown by the figures of the following analyses:

	A Per Cent.	B Per Cent.
Alumina and iron oxide	19.79	20.37
Silica	67.77	67.90
Lime	0.63	0.68
Magnesia	trace	trace
Potash	9.98	9.46
Soda	2.29	1.16

Variations in the composition do, however, occur from time to time, and it would be well to urge upon the producers the importance of securing a uniform mixture, rather than an exceptionally high potash content. It is believed that the average consumer would be better satisfied with a lower potash content in the spar, if the latter were maintained at this point with reasonable uniformity, than with occasional shipments of high alkali material alternating with lower grade spar. The modern facilities available for mixing and averaging should make this possible without hardship to the miller.

Requirements for Good Feldspar

New feldspar activities are reported from the Clinchfield district, Maine, Connecticut, New Hampshire, New York and Canada. Excellent pure spars have been located also in California and South Dakota. As regards the requirements for a good grade of body spar it might be said that:

1. The spar should have a silica content of not above 69 per cent.
2. The potash content should not be below nine per cent.
3. The soda content should not be above three per cent.
4. The spar cone fired to cone eight should be thoroly fused, but should not flatten or change its shape markedly.
5. The color of the fired spar should show a white and not a gray-black ground, and should not show an excessive number of specks.

In body spar the soda, if more than three per cent., causes a decided softening and liquefying action which may easily give rise to crooking or warping of the body in a little harder fire.

In glaze spar the soda content need not be so restricted, of course. The question as to whether a high soda content is necessary for spar used in glazing we are inclined to answer negatively. We think that a high potash spar of clean color may be used for this purpose very satisfactorily, especially where the fritt contains borax, which supplies a certain amount of soda.

Sagger Clays

The variety of clays offered for sagger purposes makes it a bewildering task to classify them. An extensive series of tests conducted by the Homer Laughlin China Co. has brought out the fact that the principal factors involved are the drying shrinkage, the transverse strength in the dry state, in mixtures of one part of clay and part of grog dust by weight, the firing shrinkage at cone eight, and the absorption at the same temperature. One of the main considerations usually neglected is the after-shrinkage upon repeated firing. If a sagger body continues to shrink decidedly upon subsequent firings, the saggers are subjected to a severe stress since they must contract under pressure, with the result that the breakage is high. Furthermore, it is necessary that the sagger be strong mechanically, and yet resistant to sudden heating and cooling.

In a general way we have traced four classes of sagger clay, which have the following characteristics:

Divided Into Four Classes

Class 1. Drying shrinkage, seven per cent.; firing shrinkage at cone eight, 5.5 per cent.; absorption at cone eight, 2.5 per cent.; transverse strength in dry state, 120 pounds per square inch. Of good strength upon first fire but overburns gradually, and sometimes softens on subsequent firings.

Class 2. Drying shrinkage, 6.2 per cent.; firing shrinkage, 3.4 per cent.; absorption, 12 per cent.; strength in dry state, 120 pounds. Does not overfire on use but continues to shrink.

Class 3. Drying shrinkage, seven per cent.; fire shrinkage, 6.8 per cent.; absorption, 2.3 per cent.; dry strength, 220 pounds. Does not overfire nor shrink appreciably in use. Possesses good mechanical strength.

Class 4. Drying shrinkage, four per cent.; firing shrinkage, four per cent.; absorption, 15 per cent.; strength, 80 pounds. Is quite high in silica, does not overfire nor shrink in use but is rather weak and punky.

In these figures the dry strength refers to a mixture of one part of clay to one of grog dust. All absorption and fire shrinkages are referred to cone eight. All shrinkages are referred to the wet length. None of these clays should be used alone, and a combination of Classes 1, 2 and 3 should give the best results. Class 4 is not desirable. The question of sagger materials is a large one and deserves further attention.

* * *

BRITISH SELLING PRICES REDUCED

Due to an agreement between the British Pottery Manufacturers' Association and their employes, whereby the latter have accepted a ten per cent. reduction in wages now and an additional ten per cent. in February, selling lists have been revised and American importers of these lines have been so notified. The new selling lists became operative as of January 1.

American importing houses which have been accustomed to at times buying the entire output of some foreign factories, have hesitated to place any large business with these manufacturers, believing that a price reduction was due.

* * *

WEST VIRGINIA HAS 22 POTTERIES

A record just compiled by the State Department of Labor of West Virginia shows that state to have 22 potteries, manufacturing earthenware, hotel china, sanitary pottery and electric porcelain specialties. In these four trades, 4,386 people are given employment. The plants are rather widely scattered, extending from the most northeasterly corner of the State, in Chester, W. Va., down to the central part of the State. However, Newell, W. Va., lays proper claim to the title of having the largest single pottery in the United States, that of the Homer Laughlin China Co.

* * *

POTTERS URGING "AMERICAN VALUATION"

American pottery manufacturers, both those manufacturing semiporcelain, and chinaware and also bisque doll heads are now appearing before the Senate Finance Committee at Washington, urging that the American Valuation clause be inserted in the new tariff bill.

W. H. Fulper, head of the Fulper Pottery Co., of Flemington, N. J., was a recent witness before this committee, and for his industry he asked that a rate of 55 per cent. ad valorem be inserted in the bill on imported bisque doll heads.

* * *

PUBLISHES INTERESTING PAMPHLET

"Explosives Part in China Making" is the title of an eight-page pamphlet recently published by the Hercules Powder Co., Wilmington, Del. It is an interesting description of pottery manufacture and the ingredients which go to make up pottery. It is well illustrated with plant views and pictures showing various types of high grade tableware and fine ceramics. The illustrations were furnished by Lenox, Inc., Trenton, N. J. The pamphlet may be secured free by writing to the "Hercules Mixer," Hercules Powder Co., Wilmington, Del.

* * *

BEDFORD CHINA APPOINTS NEW SECRETARY

Regular monthly meeting of the Bedford China Co., Cleveland, Ohio, yesterday, resulted in new appointments to the executive staff of the organization. George Williams, Cleveland business man, was elected secretary, to take the place made vacant by the resignation of C. B. Reddrop some weeks ago. At this meeting also Harry Muirheid, formerly of Newark, N. Y., was appointed director of sales.

Mr. Muirheid comes from the Mannick & Miller Co., New York City, and has accomplished much in developing sales for industrial organizations. He will assume the post at the Bedford China, January 1.

Business in the decorated ware division of the Bedford China Co. has picked up remarkably in the last few weeks, and the turn of the year promises exceptional outlet for this material, in the opinion of Harry Bailey, general manager. The vitrified plant of the Bedford is increasing in output and now is operating at two-thirds capacity. The cooking ware department does not show the same improvement so far. The Bedford has completed the construction of its new decorated and glass ware shops, and these presently will be in full operation.

* * *

W. T. DARDEN TAKES NEW POSITION

William T. Darden, of Chicago, Ill., who has completed a Pacific Coast trip for the Potters Co-Operative Co., of East Liverpool, Ohio, and who has his general offices in the Palmer House, Chicago, has been appointed western sales manager for the Jackson Vitrified China Co., Falls Creek, Pa., manufacturers of underglaze vitreous china dinner and hotel ware.

* * *

ENLARGING POTTERY PLANT

Levi Baker, proprietor of the pottery plant at Albany, Cal., is enlarging his plant on account of the demands of the business. William Tunnicliff of London has just come to this country and will be associated with Mr. Baker in the plant.

* * *

DESIGNS NEW DINNER SHAPE

The Cartwright Pottery Co., of East Liverpool, Ohio, has designed a new fancy dinner shape for the 1922 trade which has been named the "Havre." The lines of the ware are new, and permit of a wide latitude in decorating for this character of modeling. The first stocks are now going thru the kilns.

* * *

FEATURING UNDERGLAZE WARE

The first glost kiln has been drawn at the plant of the Jackson Vitrified China Co.'s plant at Falls Creek, Pa., a company which was recently reorganized and the plant placed in operation under the management of W. J. Jackson. Underglaze decorations are to be featured by this company, the line being a new one with them. Heretofore only overglaze decorations were shown in its line.

* * *

GENERAL CERAMICS TO EXPAND

The General Ceramics Co., Metuchen, N. J., manufacturer of sanitary earthenware, has commenced the erection of the proposed addition to its plant, to include the installation of a new kiln, of gas-operated type.

* * *

MAKING PLANT ADDITIONS

The Mosaic Tile Co., Matawan, N. J., has awarded a contract for the erection of two additions to its plant, 127x180 feet, and 60x138 feet, respectively, practically doubling the present plant area. It is proposed to extend the capacity and considerable machinery will be installed as soon as the structures are ready for occupancy. The plant was at one time operated by the Atlantic Tile Co., and later acquired by the Mosaic company, with headquarters at Zanesville, Ohio. This is the second addition that the present owner has erected. Walter Miller has come from the Zanesville works to superintend the construction work and handle the new equipment installation.

* * *

DISCOVER NATURAL GAS SUPPLY

Because an additional supply of natural gas has been located, the Ironspot, Ohio, stoneware plants of the American Clay Products Co., of Zanesville, Ohio, will now make use of that fuel for its kilns. The Ironspot plant is the former Ransbottom Bros. Pottery, and it is one of the largest of the kind in the Zanesville district. The gas is to be supplied thru a new pipe line being built at a cost of $21,000, and while the company will supply additional potteries in Crooksville and Roseville with fuel, there will be no domestic service offered, the entire flow being conserved for manufacturing purposes.

* * *

AIMS TO DOUBLE OUTPUT

The Woodbridge (N. J.) Ceramic Works, manufacturer of sanitary ware, has plans under way for a number of extensions and improvements in its plant, to cost about $25,000, to be used for increased manufacture. The work will consist of a main one-story building, 60x125 feet, and the construction of one new kiln, in addition to the new kilns now being installed at the pottery. It is proposed to double, approximately, the present output.

DEFINITION OF IMPORTANT VALUATION TERMS

William H. Kobbe, manager of the Valuation Department of Arthur D. Little, Inc., Cambridge, Mass., has made up a glossary of valuation terms which should prove very interesting at this time, in connection with the annual statement of profit and loss, and the forthcoming report on income tax.

Value. Means not only exchange value in dollars, but may properly be used to measure utility. The utility of such an unexchangeable article as the human hand is measured in dollars for the purposes of award or compensation. There can be but one correct amount for any particular value, but there may be several different values for the same commodity.

Fair Market Value. Is the amount of money which would induce a sale as between a willing seller and prudent purchaser; provided both seller and purchaser possess enlightened knowledge as to the particular commodity changing hands.

Service Value. As applied to clay deposits this term has somewhat the same meaning as "intrinsic value", excepting that it is a broader term and includes the extrinsic factor of availability. It therefore may be defined as the value due to quantity, quality, and location, irrespective of ownership or management. To use a marine expression, it is the "as is and where is" value. It exists regardless of earnings.

Going Value. Also known as "Going concern" or "Going concern value." It relates to establishment of earnings and may accrue in addition to and over-and-above "Service Value." The wise exploitation of a clay deposit for profit results in a certain going value accruing to such deposit thru actual monetary returns.

Popular Demand. Is used in its ordinary meaning. It is applicable to clay deposits on account of the insistence of the trade for certain recognized brands. For example, certain brick, tile and other clay products under trade names have become so popularized that proper consideration of this fact is essential to a fair valuation.

Economic Injury. Results when a portion of a valuable clay deposit is removed or depleted. Such economic injury is suffered irrespective of appreciated value due to enhanced real estate prices or other extrinsic influences. A valuable deposit of kaolin is "economically injured" thru depletion notwithstanding the fact that the building of a new railroad has enhanced the total value of the property. The value of the deposit itself has sustained depletion.

Mineral Rights. The Property interest of one who pays a periodical rental to the owner of the property for the privilege of quarrying or exploiting a deposit.

Mineral Fee. The ownership of the clay alone. It does not include fee title to the surface.

Depreciation. Means the gradual reduction in the value, of property due to physical deterioration, exhaustion, wear and tear thru use in trade or business.

Obsolescence. Means the gradual reduction in the value of property due to the normal progress of the art in which the property is used or to the property becoming inadequate to the growing needs of the trade or business. Obsolescence, a gradual lessening of value, must be distinguished from "loss of useful value," which contemplates an abrupt termination of usefulness.

Loss Of Useful Value. Results when thru some change in business conditions the usefulness of the asset is suddenly terminated. Thus, the physical equipment of a mine or pit may lose its useful value thru the unexpected encountering of unfavorable geologic conditions.

Amortization. Applies particularly to those facilities constructed wholly or in part to produce articles for the prosecution of the great war. For example, a cotton mill constructed under war prices or built over-size in anticipation of long usefulness may be subject to amortization, wholly or in part. The term is also used to express the "writing off" of certain amounts over the useful life of the asset. For example, the amortization of the amount or bonus paid for a leasehold covering a definite period.

Depletion or Depreciation Allowed. Are the amounts allowed as deductions from gross income based upon the depletion or depreciation suffered during the taxable year.

Depletion or Depreciation Sustained. Are the amounts necessarily deducted from invested capital or cost on account of depleting or depreciating the clay deposit or physical property from date of acquisition. It is a recognition in audit of what actually happens.

Mineral Property or "Property" includes clay deposit, plant and equipment, development, and the surface value of the land. The value of a clay property is the sum of the values of its component parts.

Discovery. Is not applied to extensions of known deposits or ore bodies. It may be defined not only as a discovery of a new mine or deposit not previously known to exist, but the discovery of the true nature of a known deposit. The utility of a deposit may be discovered as well as its physical presence. For example, a deposit of "clay" or "dirt" may be discovered to be high grade Fuller's earth. There is no advantage in knowing that a deposit exists if ignorant of its true character.

Current Prices of Common Building Brick Six Inch Drain Tile and Hollow Building Tile

There are comparatively few changes in the price of common brick, drain tile and hollow tile in the cities listed below. Only 16 cities revised their common brick price during the past month, and of these revisions five were upward. Fluctuations were very slight in every case, the greatest change being that in Huntington, W. Va., where common brick dropped from $18 to $15. New Orleans reduced the price $2.50 and the Seattle price also dropped that much.

Fluctuations in the price of six-inch drain tile were practically negligible. Only four changes were recorded, of which three were upward. Davenport, Milwaukee and Toledo advanced the price one cent, while the Houston, Tex., price receded two cents.

Green Bay, Wis., recorded the biggest drop in 5x8x12 hollow building tile prices. This commodity dropped from $105 to $85 per ton in that city. Outside of this there were seven changes downward and two upward. Reports from Milwaukee, Wis., give the price as $85 per thousand, which is an advance over the previous month of $25.

	Common Brick Per M	Drain Tile (6″) Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.		.15	
Boston, Mass.	17.00	.186	
Providence, R. I.	24.00	.30	
Hartford, Conn.	16.00	.14	
New Haven, Conn.	25.00	.125	
New York City	**17.00**	....	117.90
Albany, N. Y.	20.00	.155	200.00
Utica, N. Y.	22.00	.129	
Syracuse, N. Y.	18.00	.125	
Oswego, N. Y.	**27.50**	.07	
Binghamton, N. Y.	16.50	.105	
Elmira, N. Y.	30.00	....	
Rochester, N. Y.	16.50	.11	
Buffalo, N. Y.	22.50	.12	95.00
Jamestown, N. Y.	25.00	....	110.00
Allentown, Pa.	23.50	....	111.20
Erie, Pa.	25.00	.095	70.00
Philadelphia, Pa.	17.00‡	....	
Reading, Pa.	20.00	....	
Pittsburgh, Pa.	16.00	.12	60.00
Scranton, Pa.	20.00	.14	
Newark, N. J.	**20.00**	.1675	**100.00**
Paterson, N. J.	**19.00**	.17	
Trenton, N. J.	17.00	....	
Wilmington, Del.	22.00	....	85.00
Washington, D. C.	**19.00**	.11	110.00
Baltimore, Md.	21.00‡	.14	
Norfolk, Va.	16.00	.12	
Richmond, Va.	20.00	.125	
Huntington, W. Va.	**15.00**	.12	**75.00**
Fairmont, W. Va.	27.00	.10	75.00
Wheeling, W. Va.	21.00	.09	65.00
Atlanta, Ga.	12.35*	.11	
Miami, Fla.	25.00	....	180.00
Tampa, Fla.	18.00	....	120.00
Louisville, Ky.	18.00	.084	92.60
St. Petersburg, Fla.	17.00	....	120.00
Lexington, Ky.	19.00	.11	80.00*
Memphis, Tenn.	**14.50**	.09	90.00
Nashville, Tenn.	15.00	.14	109.50
New Orleans, La.	**12.50**	.12	

	Common Brick Per M	Drain Tile (6″) Per Ft.	Hollow Tile (5x8x12) Per M
El Paso, Tex.	16.00	....	90.00
Houston, Tex.	**22.00@**	**.16**	95.00
Dallas, Tex.	**12.72***	.20	95.00
Little Rock, Ark.	12.50*	.15	
Oklahoma City, Okla.	17.00	....	90.00
Cincinnati, Ohio	18.00*	.09	68.00
Cleveland, Ohio	14.00	.076	50.00
Columbus, Ohio	16.50	.08	
Toledo, Ohio	15.00	.09	70.00
Detroit, Mich.	16.85	.12	79.00
Evansville, Ind.	14.00	.045	**55.00**
Fort Wayne, Ind.	18.00	.07	**65.00**
Indianapolis, Ind.	**18.50**	.12	67.50
South Bend, Ind.	20.00	.04	**95.00**
Terre Haute, Ind.	**16.00**	....	
Bloomington, Ill.	20.00	.09	75.00
Chicago, Ill.	**12.00**	.10	59.00
Moline, Ill.	19.00	.11	48.50
Peoria, Ill.	14.50	.12	49.00
Green Bay, Wis.	14.00	.08	**85.00**
Milwaukee, Wis.	15.00	.09	**85.00**
St. Paul, Minn.	18.00	.09	75.50
Davenport, Iowa	17.50	.11	113.00
Des Moines, Iowa	20.00	.10	85.00
Sioux City, Iowa	19.50	....	**80.00**
Kansas City, Mo.	22.00	.0625	100.00
St. Louis, Mo.	**16.00**	.15	**70.00**
Lincoln, Neb.	17.00	.10	73.50
Denver, Colo.	14.00	....	**85.50**
Butte, Mont.	19.00	....	15.00§
Los Angeles, Calif.	....	.0975*	100.00§
San Diego, Calif.	19.00	.14	120.00
San Francisco, Calif.	17.00	.065	112.00
Portland, Ore.	17.50	.10	95.00
Seattle, Wash.	**15.50**	.10	110.00
Cheyene, Wyo.	22.00	....	
Winnipeg, Man.	19.00	.15	**105.00**
Toronto, Ont.	18.00	.11	
Halifax, N. S.	20.00	....	
Quebec, P. Q.	**16.50†**	.115	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, Building Supply News, and are sent to this paper by dealers in the various cities listed. **Brick and Clay Record** will appreciate any corrections. The prices marked in heavy type denote changes from last list.

*Little Rock, Cincinnati, Los Angeles, Atlanta, Lexington, Dallas, f. o. b. cars.

‡Philadelphia, Baltimore, f. o. b. job, manufacturers retail price.

§Los Angeles, Heath tile; Butte, per ton at yard.

@Hollow tile, Houston, car loads.

†Quebec, common brick, f. o. b. sheds.

The Superintendent

Helpful Hints for Practical Men
Whose Problem is Maximum
Production with Minimum Cost

MEASURING THE TENSION IN LEATHER BELTS

The question is often asked, "How can we measure the tension in belts while they are on the pulleys?"

Here is a chart that the reader will find of much assistance for determining the tension in horizontal or nearly horizontal belts. No tension indicating instruments are needed whatever. It is simply necessary to know the span of the belt or the distance between shaft centers, in feet, and sag of the belt at the center as indicated in Fig. 1.

It is a simple matter to measure the span of course and the sag can likewise be measured with great accuracy by simply sighting across from pulley edge to pulley edge and measuring the distance from the straight line connecting the two pulley edges to the point of maximum sag in the belt.

Fig. 1 shows a belt that is pulling a load. That is, the lower half of the belt is tight. Of course, no horizontal belt is ever perfectly straight even on the tight side, as drawn in the sketch. There will always be some sag present even while the belt is running with sufficient accuracy to determine closely the tension in the tight side of the belt.

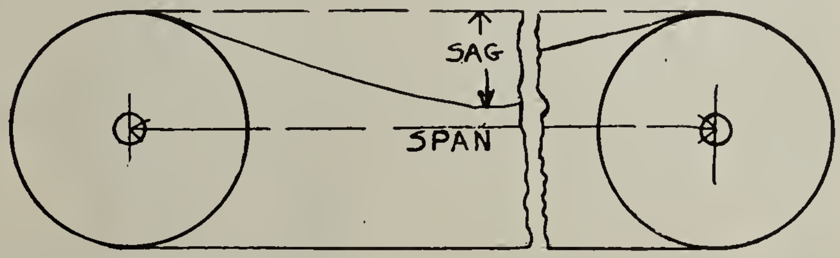
The tension in the slack is of course easier to determine while running because it invariably has much more sag.

When the belt is not running at all, and when it is not pulling any load, the sag in the upper and lower half of the belt is usually the same at which time the so called "initial tension" is easily measured in this manner.

After knowing the sag and span, all that one has to do is to run a straight line thru the corresponding figures in the chart, Fig. 2, and the tension in the belt in pounds per square inches is quickly determined in column "C."

For example: What is the tension in a leather belt having a span of twenty feet and a sag of six inches?

Run a straight line thru the six, Column "A", of the chart and thru the twenty, Column "B", and the intersection with Column "C" gives the answer as forty-two pounds per square inch.



The range of the chart as will be noted is great enough to cover all ordinary cases.

According to the United States Bureau of Standards single leather belting should have a strength of 4,000 pounds per square inch, and double leather belting a strength of 3,600 pounds per square inch. It is stated that the tensile strength of chrome leather varies from 8,500 and 12,000 pounds per square inch.

To increase the convenience of the chart it might be well to point out that if the sag were 0.6 inch instead of six inches

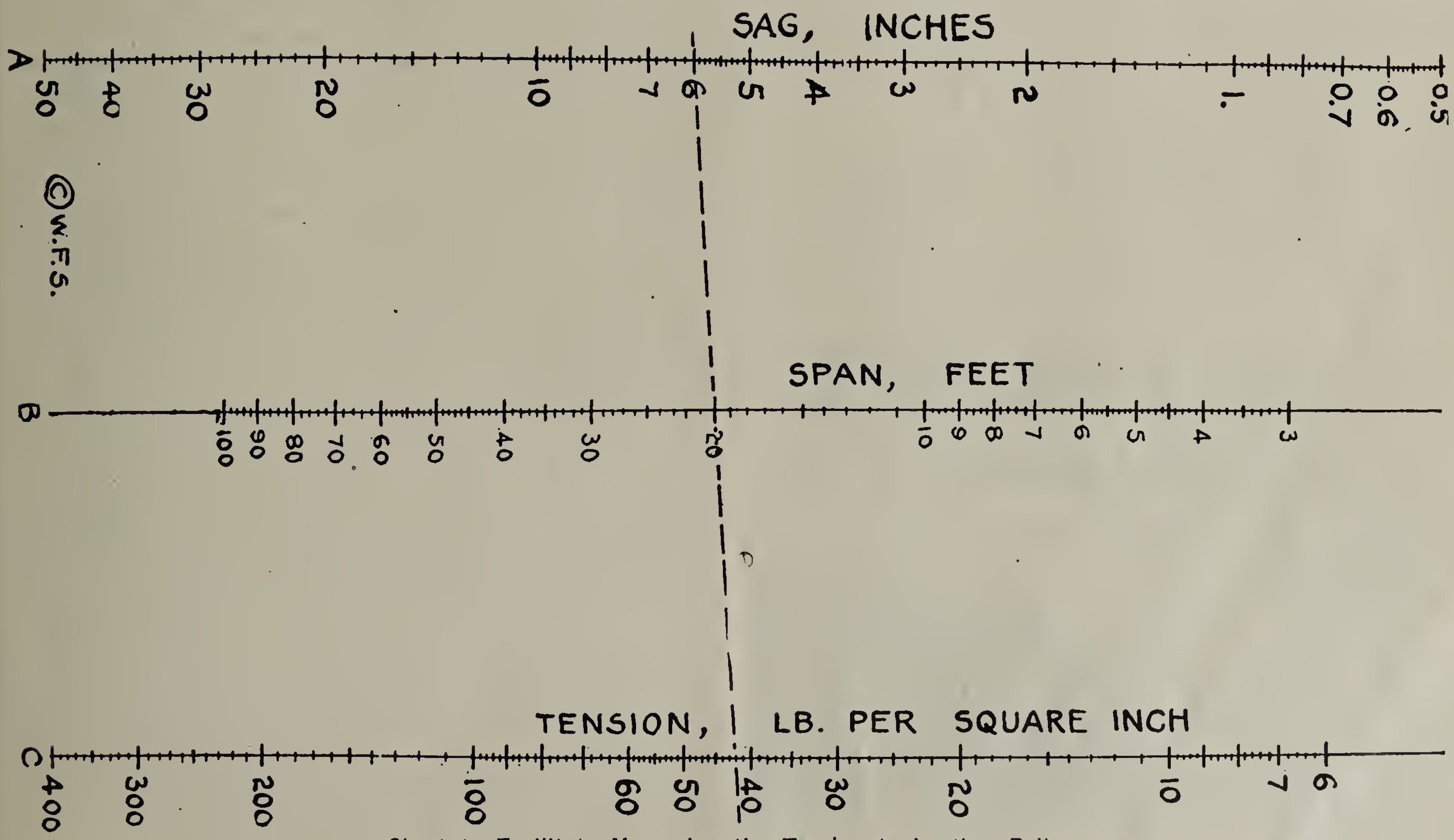


Chart to Facilitate Measuring the Tension in Leather Belts.

the same dotted line drawn across the chart would show the tenson to be 420 pounds per square inch instead of 42 pounds per square inch. In other words by moving the decimal point one place to the left in Column "A" you move the decimal point one place to the right in Column "C". By remembering this it becomes an easy matter to determine tensions very accurately where the sag may be as little as one-tenth of an inch.—*W. F. Schaphorst.*

* * *

A FABRIC BELT FORMULA

The rules as ordinarily given for fabric belts made up in plies are something like this: "A 4-ply stitched canvas belt is equivalent to a single leather belt. An 8-ply is equivalent to a double leather belt. And so forth."

Then, after knowing the equivalent we have to hunt up our rules of thumb for leather belt before being able to decide on a width necessary for a given drive.

The writer has hashed over these rules and equivalents and has hit upon a formula that gives a direct answer without mentioning leather at all. The formula applies to most ordinary belts made up in plies such as rubber, stitched canvas, and Balata.

The formula is:

$$\frac{W\,S}{\dfrac{2640}{P}+136}=H$$

where W = width of belt in inches;
S = speed of belt in feet per minute;
P = number of plies;
H = horsepower.

For example, what horsepower may be transmitted by a 10-ply Balata belt whose width is 6 inches and whose speed is 4,000 feet per minute?

Substituting in the formula we get:

$$\frac{6\times 4{,}000}{\dfrac{2640}{10}+136}=60\text{ hp.}$$

Thrown into its other forms for the determination of either W, S, or P we have:

$$W=\frac{H}{S}\left(\frac{2640}{P}+136\right)$$

$$S=\frac{H}{W}\left(\frac{2640}{P}+136\right)$$

$$P=\frac{2640}{\dfrac{WS}{H}-136}$$

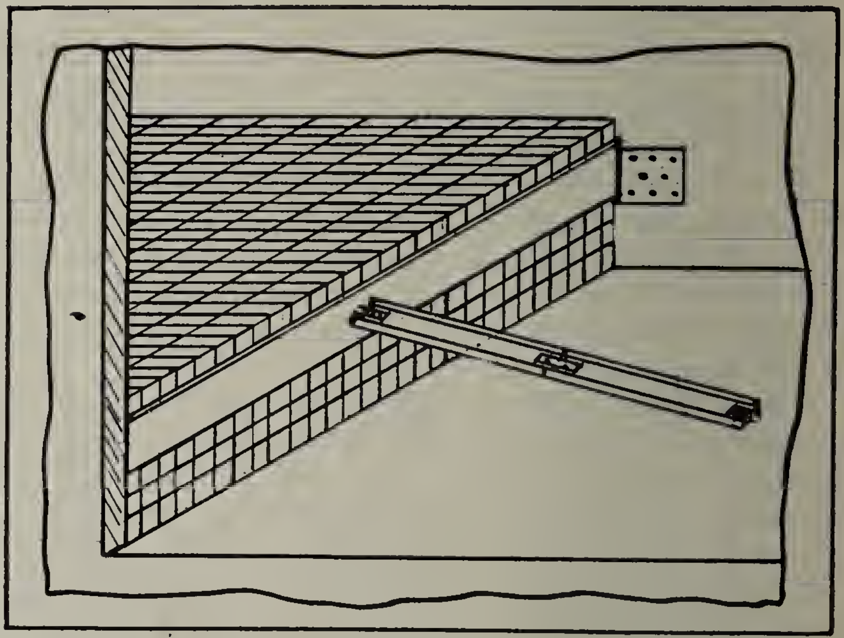
—By W. F. Schaphorst.

* * *

TEMPORARY CAR BRACE

We show in the accompanying sketch, a method used by one plant to brace its brick in the car when the switching crew must handle a part load.

In this particular instance, the switching was done at night and often both ends of as many as 15 cars would have to be braced before the day shift went home. Formerly all of the bracing was done with lumber. It was found that both the material and labor were expensive and frequently several hours of overtime work were required. A board or two boards spliced together are placed across the car near the top rows of brick, and cleats placed on each end of the board against the sides of the car as shown in the sketch. The brace, running from the center of this board to the floor of the car, was formerly made of wood, and it was found that continued nailing broke the ends so that it could not be used repeatedly, thereby causing waste. The improved brace was made of 3-inch channel iron about six feet long with a hinge in the middle. On the ends pointed pieces of wrought iron are riveted so that one end sticks into the floor of the car, and the other end into the board running across the car next to the brick. At the point where the hinge is placed, there is a strap of iron and catch which enables the brace to be locked into place, so that the bouncing of the car against another car during switching will make it impossible to displace the brace.



Showing Brace in Place Holding Up Brick in One End of Car.

In placing the brace in position, the points are driven into the floor of the car at a point that will enable the operator to lock it into place with a little pressure against the board, holding the brick. A little experience will show any man just how to place this brace in position, without too much or too little pressure. This is done quickly and the removal will also occupy only a minute.

Many plants do not brace their part loads of ware, and often damage good ware as a result. This is not done in some cases because of the expense and in other cases because when the switching crew arrives to do the work, there is not time to brace with lumber. Braces of the kind mentioned are very adaptable under either of these conditions, as they are economical to use and further because they can be put into place after the switching crew arrives.

Every plant can make a good investment by having the blacksmith make some of these braces out of the scrap iron that lies around every brick plant. Almost any piece that is stout enough can be used.

* * *

1922 EXPORT PROSPECTS BRIGHT

While export business for brick and clay products the past several months has been well below the normal mark in the southeastern territory, there is every promise of material improvement after the first of the new year, in the opinion of manufacturers of Atlanta and Chattanooga, who are generally looking forward to a good export year. Considerable brick is expected to be taken by Cuba, which does not manufacture in sufficient quantity to meet the demand, and negotiations are now in progress in the Chattanooga district for a large building brick order to go to Cuba. The industry is beginning to hum again in the southeastern territory, and a number of the plants are going at full capacity with plenty of orders in hand to insure steady operations.

Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

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CHANGING NATURAL COLOR OF BRICK

1,012. *South Carolina—We would like very much to know if it is possible to secure in any way a dark red color in brick where the natural clay burns a light chocolate brown.*

I have thought perhaps there was some preparation that could be mixed with the clay in the pug-mill, or mixed with the oil in the die, or perhaps something used in setting or burned in the furnaces of the kilns. If there is such a thing, will it be costly?

We make an end cut common building brick, but competition is pretty keen and dark red brick seems preferable in our market.

To change the colors to which clays burn naturally is at the least a very difficult matter. Except where the clays are susceptible to color changes due to atmospheric conditions in the kiln, and where material is added in the furnaces to produce a certain color effect, it is almost impossible to change the colors of the brick without it being exceedingly expensive.

We know of instances where a basic clay is used which has the proper physical and chemical properties to produce a good brick but which burns to a poor color, where another clay is used whose working properties are very poor but whose effect on the color of the product is very good. Oftentimes the overburden of a clay or shale serves this purpose in a very excellent manner.

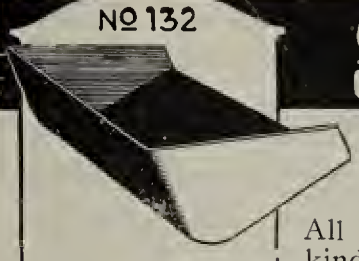
In the case of soft mud brick manufacture, the color is often improved by the use of a special molding sand which brings about the red coloration. This molding sand can be purchased from certain concerns who have such deposits in their holdings.

Altho we know of no instance where this is actually being done, the use of a slip clay such as the Albany slip clay might prove very satisfactory as a coloring agent. It is possible that the clay column as it issues forth from the die can be coated with a paste made up of this clay in much the same manner that enameled brick are enameled on the column.

Albany slip clay burns to a beautiful red at a certain temperature, and if the brick upon which it is used produces a good hardness at the same temperature, it is not altogether improbable that this process may be worked out satisfactorily, and at not too great an expense.

Another method of coloring clay columns is to use an iron oxide of good purity and permit it to run from a hopper placed at the mouth of the die in the form of a powder on the clay column. This powder is then imbedded into the clay column as the column passes under the roller. This method is now being used.

In the Hudson River district, a good many brick manufacturers use a hematite red, sold by one of the mortar color agents. The brick in this vicinity burn fairly red without the use of the coloring material. However, the use of this material iron oxide deepens the shade and enables the manufacturer to sell a lot of brick as No. 1 grade which would other-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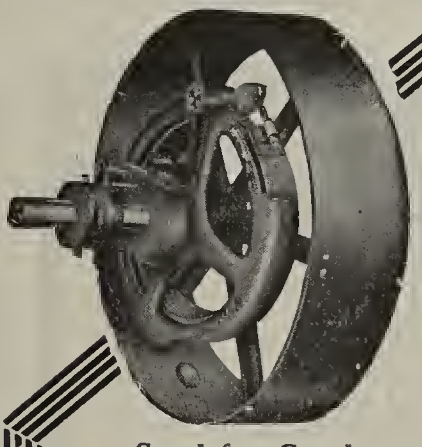
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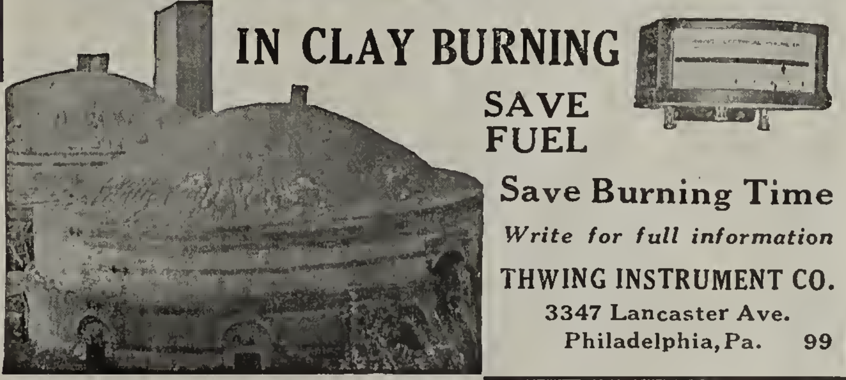
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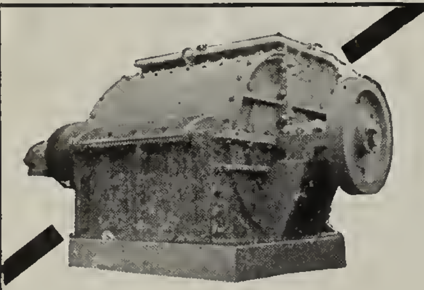

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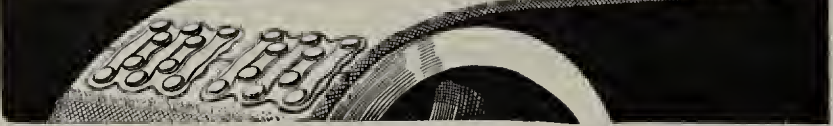

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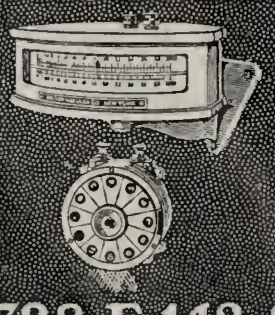

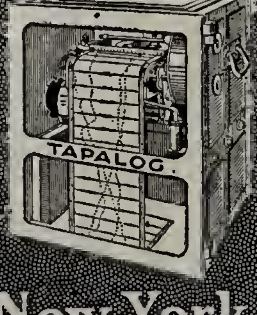

738 E 143 St. New York

wise have to be classed as "light hard." We understand that this process more than pays for the cost of the coloring material, which we believe runs about five cents per thousand brick. It is customary with these concerns to mix from one to five quarts of color with each wheelbarrow of molding sand. The coloring material adheres to the surface of the brick as they come from the mold, and it is burned in the brick in the kiln.

The suggestion that the coloring material be added to the oil used in the die is extremely interesting. It is possible that this may work, altho we know of no practical application of this principle.

Altho this is a very dangerous thing to do, since it may cause you trouble due to scumming or otherwise effect difficulties, it would at least be worth trying, adding some finely ground lime to your clay. The lime has the property of masking the colors produced by coloring oxides, and it is possible that the chocolate brown color may be changed to a red, altho this would, of course, be only a gamble. However, it may be worth while to give this method a trial by experimenting with a small quantity of brick and see what the effect is.

Experiments have been made, using a solution of ferric chloride which would analyze 113 grams of ferric oxide per liter. The solution was applied on the column and it was found that the color was improved in the brick.

Experiments whereby ferric chloride was volatilized in the kiln were also made. One-half pound of ferric chloride was put in each fire box and the damper closed until the fumes were coming out of the fire boxes, and the kiln maintained in this condition for one-half hour. By the use of ferric chloride in this manner for several treatments during a burn, it was found that good clean red colors were obtainable.

As stated in the beginning, the problem of trying to change the color to which a clay will naturally burn is a most difficult and expensive one. Sometimes results are obtainable and at other times nothing can be done. The above information gives suggestions for the manufacturer to use, but we can give no encouragement as to the possibility of success.

* * *

LIME IN PLASTIC CLAYS

1,013. *California.—Do you think a revolving steam heated clay screen will overcome the effects of lime in plastic clays burning to 3,100 deg. F., in connection with its use in the manufacture of face brick?*

A revolving steam heated clay screen would by no means overcome the effect of lime in your plastic clays. Screening would have no other effect than to dry the clay, and the pulverizer is often used for grinding clay high in content of lime pebbles. The pulverizer simply pulverizes the pebbles to a high degree of fineness, and the lime is then distributed thoroly thruout the mass of clay, and in this way made weaker.

We assume that your lime is already quite thoroly distributed in your clay, in which case there is no practical way of eliminating it. In the face brick industry where lime forms scum, barium carbonate is often added, which precipitates the calcium salts, making them insoluble, and reducing the scumming.

* * *

KILN BUILDING ON FILLED GROUND

1,014. *Illinois.—We would like to do some kiln building on a fill made of cinders and brickbats. Is this practical and what construction should we use?*

This is entirely practical, and there are many successful instances where this has been accomplished.

The method is to put in a foundation of concrete over the entire surface of the kiln; that is, both of the outer walls and the floor on which the ware will be set. If this concrete is made approximately 12 inches thick and reinforced with old railroad rails or scrap iron, it will prove very satisfactory unless the fill beneath this concrete would settle unevenly. You could use some of the brickbats from the present location to mix in the concrete, and thereby save some of the cost of the cement, sand and gravel. This concrete foundation should be placed low enough to permit building approximately 18 inches of fire brick on top to prevent the heat from reaching and disintegrating the concrete.

To put in this kind of a foundation may raise your kiln too high or may entail the removal of too much of your present fill. But it is the only satisfactory method that we could suggest. Personally, we are very much in favor of a concrete foundation of this type under every round down-draft kiln, as we believe the repairs to the floor and the reduced breakage in the ware will more than pay for the additional cost of construction.

Naturally this concrete foundation would have to be in two layers, one beneath the main fuse running to the stack, and the other beneath the feather flues which feed into this main stack flue.

* * *

USE OF BARYTES IN CONTROLLING SCUM

1,015. *Ohio.—We are operating a stiff mud brick plant, dry pans and pug-mill, and would like to learn the method for using barytes to control white scum.*

One concern that we know of adds barium carbonate at the dry pans in a powdered form to the clay as it is being ground. This concern uses approximately 28 pounds of barium carbonate per thousand brick in this manner.

The better way to add barium carbonate to clay is to have two barrels or tanks mounted above the pug-mill, and all the water supplied to the pug-mill should be from the tanks. The barium carbonate in proper quantity should be added to the water in the tank, but since the chemical is not very soluble, it is necessary to have agitators of some kind to keep the chemical in suspension. While the solution is being brought from one of the tanks the other should be prepared.

Barium carbonate has been found to be very satisfactory for preventing scum, and has produced in many instances deeper and richer colors in the brick.

The chemical precipitates the soluble lime salts in the clay and this stops the leaching out of the salts which produces the scum.

Some of the manufacturers who supply this chemical are in a position to give you the results of their experience, which should be helpful to you in case you plan to use this material.

* * *

WILL OIL BURN NEW ENGLAND CLAYS?

1,016. *New Hampshire—We have always been considerably interested in the matter of fuel for burning our common brick. No New England manufacturer that we know of uses oil. Why is it? Why can't New England clay be burned successfully with oil? Wood is most commonly used in New England, in places a very little coal. Any information that you can give us on this subject would be very acceptable.*

This question was referred to two men who had considerable experience in heavy clay products manufacture. M. F. Beecher of the Norton Co. has replied as follows:

"The clays available for commercial use in New England are mostly red burning brick clays of glacial origin. At quite a limited number of places are to be found stoneware and semi-refractory clays which are utilized in the manufacture of a fair quality of fire brick and stoneware. By far the largest part of the clay business of New England is in the manufacture of red building brick.

"The use of wood for burning red brick is almost universal

PULSOMETER STEAM PUMP

Will keep your pit free from water. Pumps continuously without attention or adjusting. Handles any fluid up to 40% solid when agitated and is particularly suited to Clay Plant needs.

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Red, Brown, Buff, Chocolate and Blacks—other tints made by combining.

40 years proves their permanency.
For Brick, Mortar, Cement, etc.

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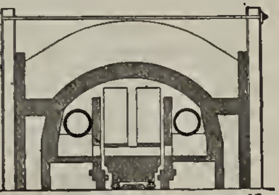

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American Dressler Tunnel Kilns, Inc.
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Electric Motors and Generators

for all requirements of the

Brick and Clay Industry

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MAIN OFFICE AND WORKS
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CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

Three Brick Plants are already established along the Pittsburgh, Lisbon & Western R. R. and the clay supply is inexhaustible.

The territory along this railroad is one of those unusual feats of nature, which seems to have been planned expressly for the benefit of mere man. Here, lying together, one on top of the other, are the two substances which are paramount in the manufacture of clay products.

First layer—4 to 20 ft. of red plastic clay, suitable for the manufacture of face and paving brick. Second layer—30 inch high grade bituminous coal, then another layer of high grade fire clay 6 ft. in depth, suitable for face brick, sewer pipe or tile.

This territory is an ideal location for brick plants of any size. Electric power and natural gas available. Shipping facilities are first class.

Write for full information,
analysis of clay, factory sites
and price of land.
No obligation.

Pittsburgh, Lisbon & Western R. R. Co.
LISBON, OHIO

in this section because of its cheapness as compared with coal or oil. There is no reason at all why oil cannot be used for firing the New England clays if kilns and furnaces are properly designed."

Ellis Lovejoy, a very prominent ceramic engineer, has submitted the following opinion:

"I have examined several New England clays and factories. The clays are not all alike as would be the case in any state, and there is no reason why they may not be burned with coal, oil or gas, as well as with wood, except the Harvard brick. The gray, green to black headers in the Harvard product seems to be possible only with wood. We can get the dark headers with coal, oil or gas, but not the peculiar lively effects produced with wood. I believe that these colors are due to the wood ash, especially the potash content in the ash, acting as a flux on the clay in the brick. If so, wood is essential to their production. At any rate, they have not been successfully produced except with wood burning."

* * *

MANY PROBLEMS TROUBLE THIS MAN

1,017. *California—We manufacture fire brick and fire tile, drying them in a waste heat dryer having both a supply fan and an exhaust fan; and burning them in round down-draft oil fired kilns.*

How soon after shutting off the fires may a cooling kiln be connected to the dryer? In other words, what is the most rapid rate at which fire brick may be cooled without danger of cracking same, or causing them to be soft or otherwise defective?

Does a kiln require more fuel per burn if switched from the stack to the dryer, after water-smoking is completed?

Will such procedure tend to cause an uneven burn, soft bottoms or other defects?

We would also like to know how many square fire brick 2½x4½x9 a gang of three setters and three pitchers should set per hour in a 30-foot round down-draft kiln. These brick are loaded 380 in a car and are delivered just outside kiln door to the setters.

We will answer the questions contained in your letter to the best of our ability, altho we should have more definite information for a full explanation of the processes. Your first question, concerning how soon after shutting off the fire may a cooling kiln be connected to the dryer, is hard to answer because it is necessary to know the raw material and manufactured product. We know of one plant making a fire brick which turns its kilns in ten days. This time is divided up as follows: one day water-smoking, three days burning, four days cooling, one day emptying and one day filling. These kilns hold about 42,000 full sized nine-inch fire brick. The setting and emptying gang consists of six men, and filling or emptying the kiln is considered a day's work for the gang.

The clay out of which these brick are made is very silicious, which assists in the fast water-smoking and burning. At this plant the waste heat goose necks are connected about three or four hours after a kiln has finished firing. They would be connected sooner if it were not for the danger of burning out the goose necks and pulling sulphur from the clinkers into the dryer.

With your oil burning, this latter trouble of pulling sulphur into the dryer would not be present and, therefore, it seems that if your clay would stand the fast cooling that you could connect almost immediately after the proper heat has been attained.

The plant spoken of above used inclined grates, and at the end of the burn the fire boxes were daubed up with sheet iron and brick as tight as possible. In fact, this is done at every plant that we know of that uses waste heat. There is enough pressure in the kiln, due to the high heat, to supply the proper amount of air necessary for the drying until the ware has cooled below a red heat. When the latter point has been reached, holes are knocked into the wicket and fire boxes to supply air. We know of another plant that requires practically twice as long to cool their kilns as the first plant, due entirely to the fact that the ware is so non-porous that fast cooling will crack and craze it.

We cannot answer the question about the most rapid rate at which fire brick can be cooled without damage, because it depends entirely on the raw material of which the brick are composed, as explained above. If your brick are too dense and you are having trouble with this feature, you might be able to improve your conditions by the addition of sand to your raw materials.

You might send a sample of your raw material or brick to the Alberhill Coal & Clay Co., which has a laboratory at Griffith Ave. and Alhambra St., Los Angeles, Cal. They no doubt could give you some data on comparative density and shrinkage of your product.

The question of whether or not a kiln requires more fuel if connected to the dryer after water-smoking depends entirely on the draft during the operation. In burning down-draft kilns it is necessary to retard or check the draft somewhat towards the end of the burn in order to have the heat circulate to all parts of the bottom, so that all of the ware attains the proper degree of heat. We believe that it would be hard to avoid light burns in the bottom of the kiln if connected with the dryer. On the other hand, if the speed of the fan were reduced in order to force the heat to all parts of the kiln, the draft might not pull sufficient heat into the dryer to completely dry the green product.

We believe this question and the further question of whether or not this procedure will cause an uneven burn or soft bottoms can only be answered by making a series of experiments and noting the results of each.

In the first plant spoken of above, six men set 42,000 brick for a day's work. At the time that wages for common labor were about 22½ cents per hour these men were paid 50 cents per thousand. They usually set this kiln in about eight hours. The second plant spoken of above paid 70 cents per thousand when common labor was 35 cents per hour. Four men in a gang set about 22,000 brick per day, including nine-inch series and hand-molded shapes. In this plant one transfer car took care of approximately 70,000 brick, going to three kilns each having two setters and two tossers.

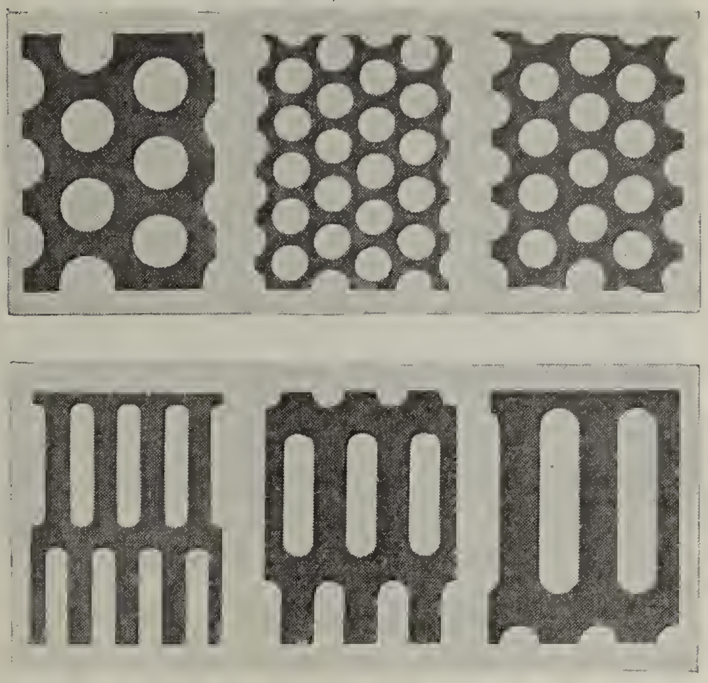
We believe that setting straight brick, the gang should average about 7,000 brick per man for ten hours. We have always found that the best way to arrive at an idea on a question of this nature is to use time study methods. It should be easy to find a half or full hour when the setting gang had average conditions and a check on the number of brick or number of cars set in that time. One of the big items in setting is to get the car into the kiln as quickly as possible. Whenever the door is large enough to permit the use of double tracks the cars can be changed quicker than with a single track. Naturally the number of brick that a gang can set would be correspondingly increased.

In both of the plants spoken of, the tossers set brick on the bottom benches, which might make a difference in an average if this was not done in another location.

⁂

REDUCES BRICK BELOW COST

A cut of three dollars per thousand in the cost of brick has been announced by the Richards Brick Co. of Edwardsville, Ill. The reduction will be taken from the profits of the company, since they feel that this stimulant should increase the use of brick by the home builders in their locality, and thus make up the loss. A slight decrease in wages at this plant was put into effect last spring. The company manufactures principally a hard finishing brick.



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Sheets furnished flat or rolled to shape for revolving screens.

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You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

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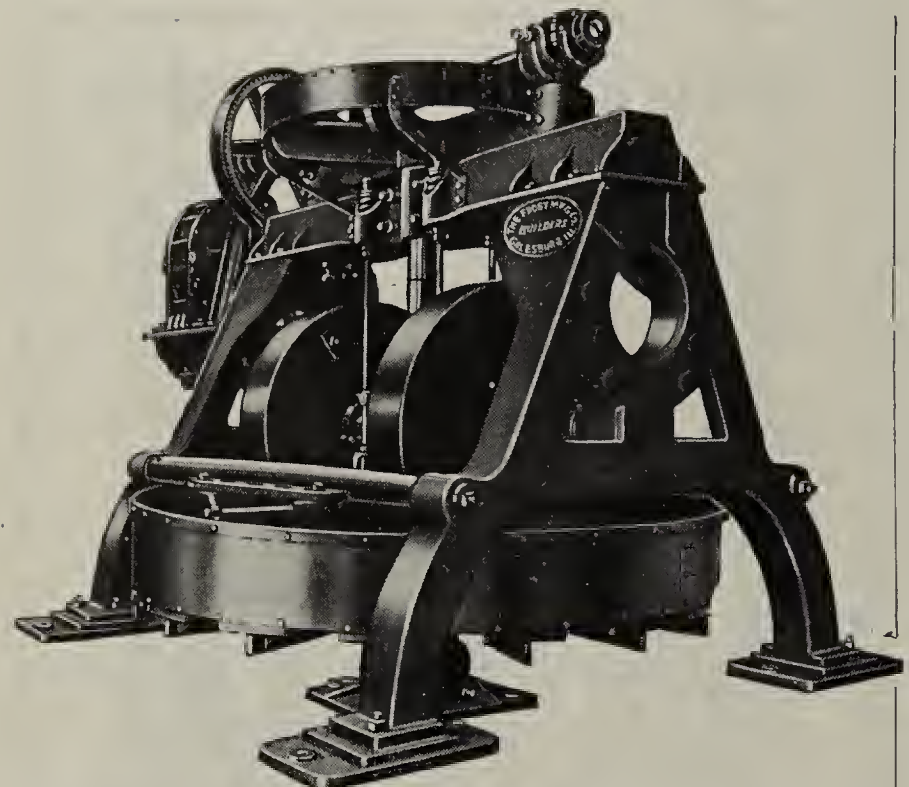

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Our Specialty

Located in the heart of Ohio's clay products territory, we are ready to give you prompt and efficient service based on years of experience, on short notice.

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Coal and Clay Cars

that give perfect satisfaction, because they are built right—of the best material.

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The Letter Box

A Place Wherein Letters
That Have General Interest Are Published
and Commented Upon

HOW FREIGHT SITUATION AFFECTS CLAY PRODUCTS INDUSTRY

A letter which was recently sent to Brick and Clay Record by Frank R. Hale, general manager of the Vigo-American Clay Co., Terre Haute, Ind., gives a very complete explanation of how the freight rate situation affects manufacturers of low grade commodities. On account of its very interesting information we have decided to republish it. The letter is in reply to some questions asked by this paper.

"To properly reply to your questions relative to the present condition of our business, requires a full explanation of the freight rate situation which so vitally affects all manufacturers of low grade commodities on which the freight charges form a large percentage of the delivered price of the manufactured article.

"As shale and fire clay, from which the best quality of brick and hollow building tile are made, are usually found in the coal areas, the factories for the manufacture of these products are largely grouped. The principal group of production is in central and eastern Ohio, including the adjoining portion of Pennsylvania. Under the comparatively low rates in the pre-war period, the manufacturers of this group shipped to practically all of the eastern and southern states, and in some instances as far as Texas to the southwest. Next to this largest group of production is the Illinois territory, including the bituminous areas of that state, and also including a small adjoining portion of Indiana just across the state line, but of the same geological formation. This group shipped approximately 1,000 miles to the northwest, south and southwest, and also met the Ohio group in competition for intermediate and southern markets. There are also many manufacturers of this line of goods in Iowa, Missouri, Kansas, Texas, Alabama, Georgia, New York and other states who compete strongly with the long distance shippers of Ohio and Illinois. As the freight charges form from 20 per cent. to nearby markets to 60 per cent. to distant markets, of the delivered price on the goods from Ohio and Illinois, it is evident that any advance in freight rates would seriously affect the delivered cost of their goods.

"Shortly before the war, manufacturers in Trunk Line and C. F. A. territory suffered an advance of five per cent., shortly followed by a 15 per cent. advance without the manufacturers in other territories receiving any corresponding advance. This disturbance of relationships proved to be a serious discrimination against the manufacturers of the Illinois group, who were unfortunate enough to be just across the line in Indiana, as the state line was used as a boundary in these advances.

"This was followed by General Order No. 28 during the Railroad Administration, which as a war measure made a flat advance of 40 cents per ton on brick and articles taking brick rates and carried in brick tariffs, but these brick commodities, when carried in separate tariffs, were advanced 25 per cent. The flat advance, so far as it was applied, maintained relationships under which competing manufacturers had been established, but the percentage advance tended to destroy the distant markets of these manufacturers.

"The next advance was under Ex Parte 74, effective August, 1920, ranging from 40 per cent. in C. F. A. and Trunk Line territory to 25 per cent. in southern territory, thus further discriminating against the Ohio and Illinois manufacturers depending largely on distant markets.

"Realizing that their business would be ruined without a fair adjustment of discriminations brought about by these various advances, the American Face Brick Association, the National Paving Brick Manufacturers' Association and the Hollow Building Tile Association about three years ago jointly employed M. F. Gallagher of Chicago and Francis B. James of Washington to present their complaint to the Interstate Commerce Commission. Expert rate men were employed and elaborate evidence was submitted in this case, showing that the rates charged on brick and hollow building tile are on an average higher than the rates charged on the general average of all freight, including less than carload merchandise and other high class freight, while brick and hollow building tile use the lowest class of equipment and require the lowest class of service, and consequently should be on a lower level than the average of all freight. This complaint also sought to remedy discriminations brought about by unequal rate adjustments between competing manufacturers, including the discrimination east and west of the Indiana-Illinois state line. The Interstate Commerce Commission had ruled in Ex Parte 67 that this was an injustice which they recommended being removed in this general case.

"Pending a decision in this general case, which is carried under Interstate Commerce Commission docket No. 10733, the brick and hollow building tile manufacturers of this country are suffering seriously, many of them being closed down, and some having gone into the hands of receivers. Statistics, thru the various associations, indicate that the production of these commodities during the past year has been restricted to approximately 40 per cent. of normal, altho building in general has been very much nearer the normal level, indicating that the present freight rate adjustment has driven builders to use local materials, such as common brick, which can be found in most of the local markets without railroad transportation, and concrete composed largely of local sand and gravel. Evidently this is not only an injustice to the public by restricting building, and restricting the choice of materials available, but is also a loss to the railroads, as the destruction of the business of the brick and hollow building tile manufacturers eliminates a large tonnage which could move at a profit to the railroads if reasonable rates were established.

"Examiner Brown for the Interstate Commerce Commission made a tentative report last summer recommending a uniform classification for brick, hollow building tile and other similar articles made of burned clay, and also recommended the removal of the present discrimination east and west of the Indiana-Illinois state line, as well as other discriminations, but he failed to approve the lower rate basis suggested by the manufacturers. The final oral argument was presented by the attorneys to the entire Interstate Commerce Commission in Washington on November 12, showing the dire need of this industry, as well as the benefit to the carriers, of rates which would move these commodities to their regular markets, and it is hoped that a favorable decision will be received from the Commission by the middle of January. On the other hand, many of the manufacturers realize that an adverse decision will render it useless for them to continue their struggle of their operating at a loss, as they have been doing, pending the final decision of this issue."

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

AGED BRICK MAN DIES

Samuel F. Gray, a retired brick manufacturer of Danvers, Mass., died at the home of his daughter, Mrs. George E. Willey, 47 Wildwood street, Winchester, Mass., December 23, in his 87th year. He started a brick manufacturing business in Danvers as a young man and continued it until he was 60, when he retired from active business and removed to Cambridge, Mass., residing there for several years. He leaves a wife, four daughters and two sons.

L. D. AND MRS. ROY INJURED IN ACCIDENT

L. D. Roy, who for years was active head of the Coral Ridge Clay Products Co., recently figured in an auto accident at Third

Des Moines Tuf-Tanned Kant-Rip Mittens and Hand Pads

Save injuries and increase production.

When the thought of danger is removed the daily production per man is increased.

Outfitting your men with proper hand protection is a small item compared with the loss of time and compensation you suffer if you don't.

May we send along a trial dozen. It won't obligate you to try them out.

Just write us

Des Moines Glove & Manufacturing Co.
508 Fourth Street, DES MOINES, IOWA

Warm, fleece lined mittens made similar, sent on request at same price.

Continuous Performance With Very Slight Expense

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The Marion Rust Special Feeder Mixer embodies all the good points of an entirely successful machine. It is a labor and time saver which will aid you in improving your ware and in cutting your production costs.

Take advantage of your opportunities, Mr. Clay Plant Owner. Save whenever and wherever possible. Write us today for complete information concerning all Marion Equipment for Modern Clay Plants.

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Marion Machine Foundry & Supply Co.
Box 395 Marion, Indiana

BRISTOL'S RECORDING PYROMETER

A Recording Instrument that takes all the chance out of burning—that relieves the fireman of much of his responsibility and sets him free for other duties about the plant.

Bristol Pyrometers have proven their worth over and over again in many of the largest plants in the country. They successfully register and record temperatures—always accurate and reliable.

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Bulletins on Request

THE STEVENSON CO.
Wellsville Ohi

St. and Broadway, at Louisville, Ky., in which a large car ran into his machine, wrecking it badly and speeding away from the scene. Mr. Roy escaped with minor cuts. Mrs. Roy was thrown to the street by the force of the impact, and suffered severe cuts and bad bruises.

J. B. OBERLY VERY ILL

James B. Oberly of the brick company bearing his name, at Wilmington, Del., has been in bed for seven months as the result of a stroke. Bright's Disease has set in, and his recovery is extremely doubtful.

S. GEIJSBEEK LEAVES FAIRMOUNT

S. Geijsbeek, the well known ceramic engineer, formerly of Portland, Ore., at present living in Seattle, Wash., has disposed of his interest in the Fairmount Brick & Tile Co. of Monroe, Ore., to the Central Clay Products Co. of Monmouth, Ore. The new owners state that the Fairmount Brick & Tile Co. will be operated as an independent company under its own name with headquarters at Monroe.

E. H. SCULL LEAVES ERNST & ERNST

E. H. Scull, former manager of systems staff with Ernst & Ernst, has left the employ of that company and organized the E. H. Scull Co. with offices in Chicago. Mr. Scull is well known to a great many clay products manufacturers, as the installation of all cost systems in clay products plants by Ernst & Ernst were under his personal supervision. The cost system recommended by the American Face Brick Association and in use in many face brick plants was devised by him.

The E. H. Scull Co. will handle anything in the line of clay products plants, and Mr. Scull will employ a staff of experts who will be thoroly familiar with the work in clay plants. The company will specialize in auditing and cost accounting systems for the clay industry.

J. F. DENISON DROPS IN ON US

J. F. Denison, of the Denison Clay Co., Coffeyville, Kan., was a visitor at the offices of Brick and Clay Record recently. Mr. Denison is a brother of the inventor of the Denison interlocking tile. His visit brought to light several new things. He has been in the clay products business for 40 years and is really in love with the industry so much that he has taken all of his sons and his nephews and one niece with him. This view is an interesting contrast to the opinion so often expressed by some clayworkers that they desire their sons to follow some other line, showing that they have not the enthusiasm for the business that is necessary for success. Another unusual feature about his views is that he always reads the advertising columns of Brick and Clay Record first, in order to find out if there is any new method or appliance that can reduce his cost or improve his product. This spirit of improvement has led him to produce a new type of cutter for hollow tile, which cuts automatically without marring the tile and at the same time places the tile upon an offbearing belt in a vertical position without the use of any labor. He has saved the labor of two men by the installation of this cutter.

NEW PLANT AT ESCONDIDO, CAL.

Escondido, Cal., is to have a modern and up-to-date brick manufacturing plant, if the present plans of H. T. Morris and A. A. Broerman, of that city, fully materalize. A company is now being promoted and it is expected that a fully equipped plant will be under way in the early spring.

Near Escondido there is located a deposit of very fine quality of fire clay, and the new company having acquired considerable rights in this tract, will commence operations as soon as organized. The logical market for the new concern will be San Diego, but some plans are now under way for the establishing of a sales office in Los Angeles, so that the company will have an extensive market for its output.

NEW COMPANY FOR LOS ANGELES

The City Brick Co., Los Angeles, Cal., has been incorporated with a capital stock of $100,000, it is said. A thousand shares at $100 each are offered for sale. $500 of this has been subscribed.

ORGANIZING COMPANY AT BOULDER, COLO.

The organization of a company to manufacture paving and ornamental brick at Boulder, Col., is being pushed by W. G. Buckles, a successful brick manufacturer formerly located at Coffeyville, Kan. The Boulder Commercial Association has endorsed the project, and a number of the leading business men of the city are lending financial support. The company will capitalize for $30,000.

It has been known for years that the clays along the front range of central Colorado are among the best in the country for manufacturing porcelain, pottery and brick, but little has been done to develop these resources. A porcelain and chemical pottery factory that is successfully competing with the best plants in this country and Europe is located at Golden, Col. The same clays occur near Boulder. There is at present no paving brick factory between Kansas and Seattle, leaving a wide territory to be supplied. The greater part of the output of the new plant at Boulder will be paving brick, but experiments will be undertaken to develop a high grade ornamental brick.

BRICK AND TILE COMPANY INCORPORATES

According to a report, the Anthracite Brick & Tile Corporation, of Wilmington, Del., has been incorporated for $255,000 to manufacture brick, tile and sewer pipe. The Corporation Trust Co., of Wilmington, is attorney for the concern.

ORGANIZE ROOFING TILE COMPANY

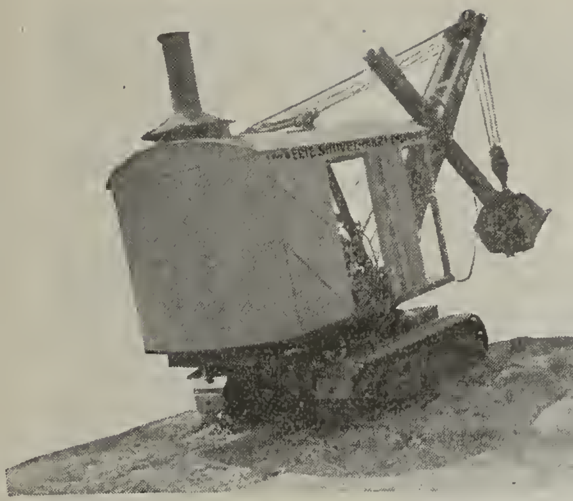
The Connecticut Roofing Tile Co., Wilmington, Del., has been organized under state laws with a capital of $200,000, to operate in Connecticut for the manufacture of clay roofing tile and kindred products. The company is represented by the Corporation Service Co., Wilmington.

HAS ORDERS FOR 2,000,000 BRICK

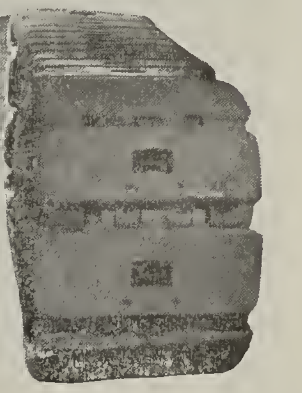
The James B. Oberly Brick Co. reports orders on hand for 2,000,000 brick for the new Marine Terminal in Wilmington, Del., delivery to start March 1. The outlook for business is fair. The company has recently installed an electric shovel and a five-ton gasoline locomotive, whereby pit operations will be speeded up. A display of 200 square feet of sample brick is laid up in the offices of this company, showing visitors and customers the kinds of brick manufactured in the plant, as well as the different bonds in which they are laid.

NEW PLANT TO START SOON

Adam J. Walz, who recently moved from Granite City, Ill., to Fort Mason, Fla., is equipping a factory for the manufacture of brick, and expects to begin operations within a short time. Mr. Walz owns considerable land in the Florida city. Common brick exclusively will be turned out in large quantities at his plant.



POWER STEERING from the cab, saves you a man's wages. Not necessary to have a man on the ground to throw clutches for steering. CLIMBS GRADES as steep as 30% (engineer's measurement).



Buy a caterpillar type shovel that is
automatically *lubricated*

The lubrication of the caterpillar type ERIE greatly reduces friction—and gives you much more climbing power and speed. It also assures you of steadier service and a much lower upkeep cost.

These features of the new 1922 ERIE and many others are interestingly described in our Bulletin B-60. Write for a copy.

The treads of the caterpillar type ERIE are all-steel, practically indestructible. Every link pin is bushed, so that there is no wear on the link itself. Bushings when worn are easily replaced at slight expense.

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ERIE Revolving Shovels BALL Engine Co. Erie, Pa.

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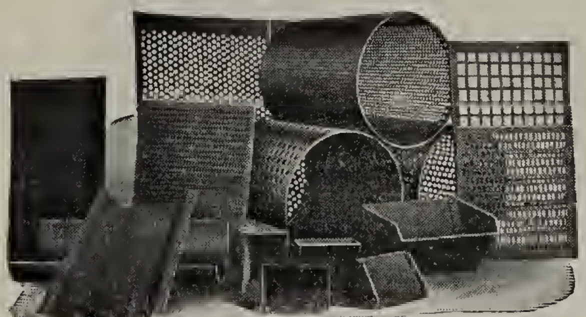
FOR ALL PURPOSES



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Especially Prepared for Brick Making

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REDUCE WAGES TO KEEP RUNNING

Workers at the Murphysboro (Ill.) paving brick plant have accepted a ten per cent. wage reduction, in order that the plant might operate thruout the winter. Their action saves a payroll of $3,500 weekly, not including office salaries, for the city. A minimum scale of $3.13 a day is assured when the plant is turning out 84,000 brick daily. Prospects for the sale of paving brick in 1922 are especially bright, and it is expected that during the spring and summer the Murphysboro plant will run to capacity to keep products going to buyers in Illinois and the west and south.

CHICAGO BUILDING LABOR SITUATION

In Chicago building circles, labor still maintains the place of interest. The building trades unions have resented the methods adopted by the Citizens Committee in enforcing the Landis wage award. In an effort to break the power of the Citizens Committee, which has been importing men to take the place of those who refused to abide by the Landis award, a general strike has been called in sympathy with the carpenters' District Council. The bricklayers' union was the only one that objected to the strike motion. The situation has resolved itself into a test of strength between the Citizens Committee and the building trades' unions.

MANUFACTURERS DECLARE FOR OPEN SHOP

In an announcement in the Streator (Ill.) Daily Press, Wednesday, December 28, 18 manufacturing concerns have made a "declaration of principles" regarding the attitude towards labor which will be assumed in 1922. It is stated in the announcement that labor conditions at Streator have been such as to retard the progress of the town industrially. The reputation of Streator as a "closed shop town" has, it is claimed, kept many manufacturing industries from locating in that city. The manufacturers have declared that hereafter their plants will be operated on the "open shop" basis, as soon as contracts with the labor unions expire. Altho not opposed to organization of labor, manufacturers state that they are "unalterably opposed to boycotts, black lists and other illegal acts of interference with the personal liberty of employer or employe."

Among the manufacturers signing this declaration are the Streator Drain Tile Co., Streator Brick Co., Streator Clay Manufacturing Co. and the Barr Clay Co.

CENTRAL TILE BEHIND ON ORDERS

W. S. Duenweg, of the Central Tile Co., Terre Haute, Ind., says the demand for tiling during the past year and the bookings for future deliveries exceeded the expectations of both manufacturers and dealers, so much so that one of the largest tiling manufacturers recently sent out notices to the effect that they could not guarantee any deliveries on orders placed now until after March 1. Mr. Duenweg says the past season has been an unusually busy one for his company and that all prospects point to 1922 being as good if not better. The Central Tile Co., manufactures high grade floor and wall tiles.

EVANSVILLE TO HAVE NEW BUILDING CODE

Recommendations for a new building code have been made to Mayor Benjamin Bosse, at Evansville, Ind., by Edward C. Kerth, city building inspector of that city. The recommendations call for making more rigid certain classes of buildings in the fire limits; for extending the fire limits; incorporation of all legislative measures for inspection; inspection of electrical work under city supervision; observance of legislation on plumbing; more power for the building department; provision for regulation of storage of inflammable liquids and regulation of storage.

INDIANA COMPANY INCREASES CAPITAL

The Roberts Clay Co., Clay City, Ind., has filed notice of increase in capital from $15,000 to $25,000, for proposed operations, extensions and so forth.

INDEPENDENCE BRICK GIVES BONUS

Despite the fact that business has not been as good as usual in the past year, the Independence (Kan.) Brick Co. at the close of the year distributed a bonus of $3,500 to its employes. This bonus has become a regular event with this company, having been established four years ago. During the past year enlargements at the Independence plant have been made, and its capacity has been increased, and it is hoped that the coming year will justify these expansions.

CLOSES YEAR OF GOOD BUSINESS

The Coral Ridge Clay Products Co., of Louisville, Ky., closed a very fair year, the company having been busy and running steadily all season, one of its largest contracts being for hollow tile for the new Federal hospital buildings at Dawson Springs, Ky. The general outlook is good for the coming year.

LOUISVILLE MATERIAL PRICES DROP

A recent report in review form in one of the Louisville, Ky., papers stated that brick was one-fourth lower than a year ago, that hollow tile had not changed in price, and that the same was true of plaster, lime, cement and sand. Roofing papers were given as down 25 per cent. It was claimed that current costs of labor were the same as in December, 1920. That last statement is not exactly accurate as labor is somewhat cheaper, except organized labor.

SEWER PIPE DEMAND PROMISING

The P. Bannon Pipe Co., of Louisville, Ky., is very optimistic regarding the future, as large quantities of road work have been let the last few months which have hardly been started as yet, and the plumbing trade is very active. That means a heavy demand for sewer pipe. Whether there will be enough big work to keep the hollow tile division really busy is a question, but it looks promising. The company hasn't made any brick in its plants for the past several years, having made salt glazed before the war, but having been too busy since that period, partly due to losing a plant by fire in 1920. The demand for fire clay products has also been better of late, as the steel mills, refiners, railroads, and so forth, are getting just a little busier.

H. E. BUCK STARTS OPERATIONS

The H. E. Buck Brick Co., Lake Charles, La., has taken possession of its local brick manufacturing plant, for the past five years operated under lease by Delatte & Lagrange, Inc., and will commence operations at once for the manufacture of high grade building brick.

SUSTAINS $1,500 FIRE LOSS

Fire did damage of $1,500 to the sheds of the New England Brick Co., Riverside Avenue, Medford, Mass., December 20. The fire started from an automobile, later found to have been a stolen car, which was placed under the shed by thieves and caught fire.

Can One Man Handle Your Large Sewer Pipe?

If not you are wasting a lot of time and money, because with the Toronto Invincible Sewer Pipe Truck one man can easily handle the largest pipe with speed and safety.

Why not let us help you save the labor of three or four men. A card or letter will bring full information. Write today.

Toronto Foundry & Machine Co.
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THE POIDOMETER MEANS

Better Brick—
Less Labor—
Less Expense—
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Because—it is RELIABLE, ACCURATE, SPEEDY and ECONOMICAL.

No human hands can measure, weigh and deliver clay as fast as the Poidometer—AND it will PAY for itself in less than a year.

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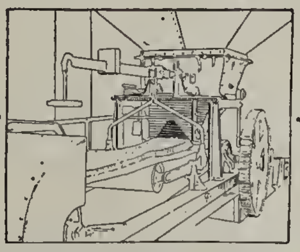

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a science in itself.

Only the institution practicing rigid economy in this operation can realize any definite saving.

Many large firms have found that through the use of the Eagle Shale Planer they are able, not only to win their shale and clay successfully, but that they can realize a substantial saving in labor as well.

The manufacturing and engineering facilities of the Eagle Iron Works are unsurpassed and we are always glad to furnish complete information without obligation.

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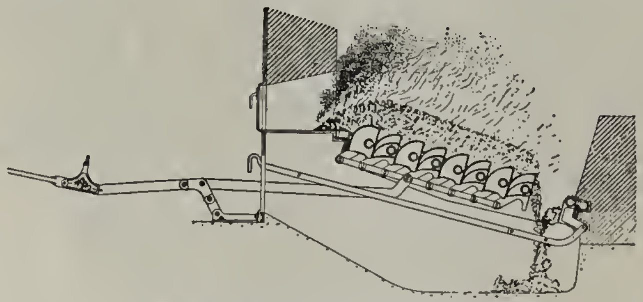
COKAL
HAND STOKERS

Permit the use of cheaper coal—eliminate steam failures—allow more time to your firemen for other duties—create good will among your men—effect more perfect temperatures due to even fires.

THEY SAVE COAL TOO



IT STOKES AND CLEANS

May we send one of our engineers to your plant with a working model. He is at your service and will incur no obligation.

Write for information.

COKAL STOKER CORPORATION
1037 NORTH CLARK STREET, CHICAGO

MAINTAINING CAPACITY PRODUCTION

The Briggs Co., Grand Ledge, Mich., is maintaining active production at its plant in the line of face brick, and record shipments are leaving the plant. In October and November, the distribution averaged over 1,000,000 brick per month, and it is expected to exceed these figures during the coming year. Production is ranging at about 40,000 brick per day at the present time, and orders are said to be on hand for over 800,000 brick. A contract was secured recently for about 250,000 face brick for the new buildings at the Michigan Home and Training School, Lapeer, Mich.

TURNING OUT SIX CARS DAILY

The Shale Hill Brick & Tile Co. of Chillicothe, Mo., is at present turning out about six carloads of tile per day. About 55 men are employed. Under the management of J. A. Dailey this concern has developed from a two-kiln plant until they now have 14, which are kept going constantly in the busy season. The raw material obtainable by this company is practically exhaustless, for the plant is located near a large hill of clay material on the banks of the Grand River.

Large quantities of tile have been finished and stored, with the idea of putting them on the market the first part of the year.

CROSSLEY MINING CO. CHANGES NAME

Announcement has been made of the change of name of the Crossley Mining Co., Trenton, N. J., to United Clay Mines Corporation. This company has been mining clays for over 17 years and business has recently grown to such proportions that it was found necessary to increase the organization and facilities to keep pace with our steady growth. The company states that it is the only clay mining firm in the world able to furnish all kinds of clay. The new name has been adopted because it was desired to have something more descriptive of the firm's position in the clay mining industry. There has been no change in the personnel, officers or policy.

NEW BROOKLYN COMPANY TO MAKE TILE

The Everlasting Roof Tile Co., Brooklyn, N. Y., has been organized under state laws with capital of $50,000, to manufacture roofing tile and kindred burned clay products. The company is headed by N. N. Payne, T. P. Killilea and D. J. Horigan. The company is represented by Fitzgerald, Stapleton & Mahon, 25 Broadway, New York.

RUNNING PLANTS AT FULL CAPACITY

Both brick plants owned by J. C. Steele & Sons are running to full capacity, one of them turning out 50,000 daily, a report states. There is considerable building going on in Statesville, N. C., a new hotel, department store and many new dwellings. About a dozen homes have been constructed with the Ideal wall, which J. C. Steele & Sons introduced there.

EXPECT QUIET WINTER

A quiet winter in the clay plants is looked for by the managers in the northeast end of Tuscarawas County, in Ohio. One of the plants in the Dover-Strasburg district will close down soon, it is announced.

TO FINISH "NATCO" PLANT IN SPRING

Work is progressing on the plant of National Fireproofing Co., at East Palestine, Ohio, which factory is being rebuilt. The plant will employ 75 men. Clay for the manufacture of hollow tile will be taken from the hills adjoining the plant site. Operations will be started in the early spring.

MEN RETURN TO WORK

About 100 men employed by the Hocking Valley Fire Clay Co., at Nelsonville, Ohio, resumed work recently after an idleness of three months due to a strike. The controversy over wages was settled early in December.

BUILDING NEW DRYER

The National Fireproofing Co., of East Palestine, Ohio, has awarded the contract for the erection of a new dryer at its plant there. The work is being done under the management of A. R. Trace, of Pittsburgh, Pa.

TO BEGIN WORK ON K W BRICK CO. PLANT

The K. W. Brick Co., a new concern, is the latest industry to locate in Warren, Ohio. A six acre tract adjoining the Erie freight station is the site for the new plant. Construction work will be started soon with the intention of having the plant ready for operation March 1. John Whitaker, of Warren, is president of the company.

FRANKLIN BRICK TO START SOON

The two plants of the Franklin Brick & Tile Co., of Columbus, Ohio, will resume operations January 16, after an idleness of several weeks in which to make repairs. At plant No. 2 the company will make drain tile and hollow building tile and at plant No. 1 the product will be building brick, both common and face. The plants are located at Taylor Station, just east of Columbus.

OHIO PLANT MAY CHANGE HANDS

Negotiations are in progress between the Central Refractories Co., of Columbus, Ohio, and the receivers for the plant of the Columbus Brick & Terra Cotta Co., which has a plant at Union Furnace, Ohio, for the acquisition of the plant, which has been idle for more than three years. In case the negotiations are brought to a successful conclusion steps will be taken at once to rebuild the plant to conform to the most modern ideas. New machinery will be installed and the power house will be rebuilt. The Central Refractories Co. has offices in the Ferris Building, Columbus, Ohio, and operates plants at New Lexington, Shawnee and Moxahala, Ohio. The plant at Shawnee has been closed down, while the plants at Moxahala and New Lexington are in operation. C. B. Young is president; A. N. Spencer, vice-president, and W. W. Connel, secretary-treasurer.

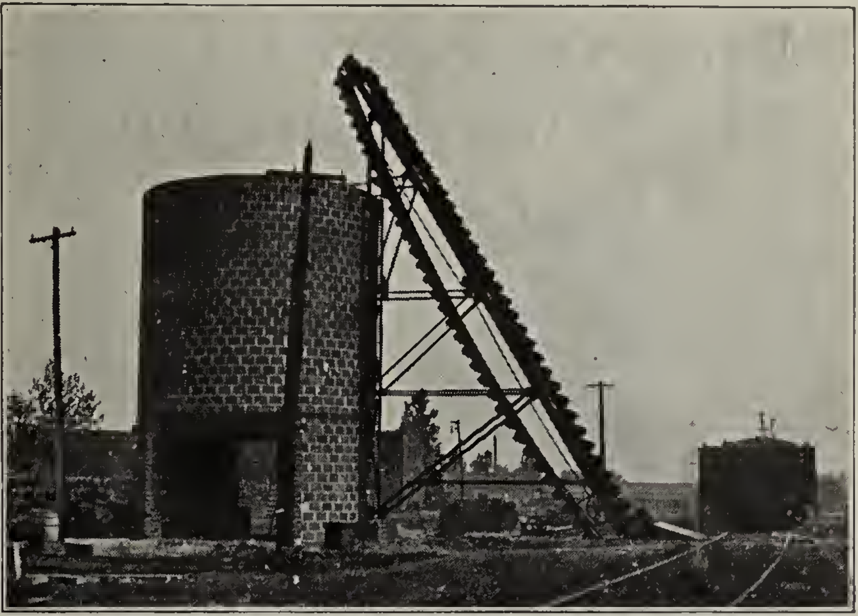
PUSHING FOR PLANT AT TIRO, OHIO

Several leading citizens of Tiro, Ohio, encouraged by the initiative of outside interests, are boosting the erection of a brick and tile plant in their city. A one year option has been secured on 20 acres of ground located north of the town along the Pennsylvania Railway. The active stock subscription campaign will not be launched until spring.

During the year 1918 this industry was inaugurated, but the war halted operations temporarily. With the outlook for better business in the near future, the present is regarded as a good time for a revival of the project.

MONEY FOR HOMES TO BE PLENTIFUL

According to James A. Devine, secretary of the Ohio Building Association League, who has just completed a trip thruout the Buckeye State in which he came in contact with 1,000 building and loan associations, there will be sufficient money next spring to take care of all home building projects in the



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THE Sunbury Unloader requires only one man to operate. It reduces the time and cost of unloading coal to a minimum. It is speedy (55 tons in 50 minutes). Simply, yet durably constructed. Seldom needs repairs.

SUNBURY UNLOADERS will solve your problem of handling coal with less expense and more speed.

Tell us your requirements and let us send you complete information. It will not obligate you in any way.

THE SUNBURY MANUFACTURING CO.
SUNBURY, OHIO

Steam Shovels
OSGOOD
Modern Excavating Machinery

The OSGOOD 29—1 yd. Revolving Steam Shovel with Continuous Tread Mounting demands your investigation.

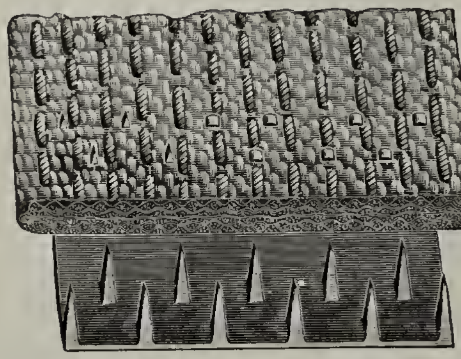
Steel Truck Frame interchangeable for Continuous Tread or Traction Mountings.

Power Steering Devices; Vertical Submerged Tube Boiler; Easy Control Mechanism; Compact for work in close quarters; Horizontal Hoisting Engines; Makes a complete circle in a diameter of only 20 ft. and Convertible for Crane, Clamshell or Dragline Service are only a few superior features.

Revolving and Railroad Type Steam Shovels ¾ to 6 cu.yd.

THE OSGOOD COMPANY, MARION, OHIO, U. S. A.

Stop Your Belts From Breaking at the Joint



The teeth of the Talcott-Clinching belt hooks wedge the fibers of the belt more firmly together, and the thin flat points clinch over just enough to bind them in without crushing or breaking the strands of the belt.

One set of Talcott-Clinching belt hooks will last as long as the belt will run.

Write us for free samples for trial.

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Buy "signed" valves with the Jenkins Diamond Mark and signature on the body.

REG. U.S. PAT. OFF. TRADE JENKINS MARK
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Iron Body Angle Valve, with Yoke

Fig. 143, standard pattern sizes 2 to 12 inches suitable for 150 pounds steam, 250 pounds water; 14 inches and above, 100 pounds steam, 125 pounds water. Made screwed, as shown, or flanged. Fitted with Jenkins Renewable Disc. Accessible stuffing box which can be repacked when valve is wide open and under pressure.

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Jenkins Valves
SINCE 1864

state. He met the officials of the various building associations thru a series of district meetings. In each of the sections visited he found prospects for sufficient money good and assurances were given that all home building projects would be taken care of. It is figured that fully 90 per cent. of home building projects in the Buckeye State are financed by building and loan associations.

FIRE DESTROYS OKLAHOMA PLANT

The Muskogee (Okla.) Vitrified Brick Co. was practically destroyed by fire recently. The estimated damage is $50,000, which is covered by insurance. Rebuilding of the plant will probably take three months.

WILL BUILD BRICK AND ROOFING TILE PLANT

The Chamber of Commerce of Hartshorne, Okla., has taken action to back the organization of a $75,000 brick and tile plant to be established there in the near future to utilize the extensive shale deposits in that vicinity. The proposed plant will have a capacity of 60,000 brick or 20,000 roofing tile per day.

PITTSBURGH STARTS YEAR WELL

Clay products manufacturers and dealers in the Pittsburgh district are facing bright prospects for the year 1922, if conditions at the first of the year are to be taken as any indicaiton of possible developments.

During the past year, building was seriously impeded by widespread strikes in the building trades that began early in the year and in many instances extended well into the fall. In spite of this, building construction in the district, with the exception of a very few localities, was the best that has been experienced in ten years. In Pittsburgh alone, 5,016 permits were issued by the bureau of building inspection for projects to cost $22,713,693, an increase of nearly 33⅓ per cent. over 1920.

Already there are several important building projects scheduled for immediate operation. An eight-story, 250 room apartment building will be started soon, with two other similar buildings and an office building in the same vicinity.

BINGEN BRICK STOPS WORK

The Bingen Brick Co., Saucona, Pa., has curtailed operations at its plant for the winter season. The company has a good stock of material on hand to hold over until spring production is started.

FIRE CLAY COMPANY ORGANIZED

The Mount Jewett Fire Clay Co., Bradford, Pa., has been organized under state laws with a capital of $50,000, to operate local fire clay properties, it is stated. R. G. Vogel, Bradford, is treasurer of the company.

SPENDING $50,000 ON IMPROVEMENTS

Improvements to cost $50,000 will soon be under way at the brick plant in Kingsport, Tenn. New kilns, a modern office building and street improvements are planned.

PLANNING TO DOUBLE CAPACITY

The Marshall (Tex.) Brick Co. has announced that capacity will be doubled the first of the year. This will give the company an output of 16,000,000 brick annually, and more if necessary to meet the demand. Work has been started on the necessary equipment.

Every year more and more brick construction is noticeable in

Marshall, and in addition to the increased local demand the company ships brick to Arkansas, Louisiana, and all over Texas.

CHANGES NAME

The Standard Brick Co. of Charleston, W. Va., has changed its name to the Standard Brick & Supply .Co.

SPENDING MUCH MONEY IN IMPROVEMENTS

The Hammond Fire Brick Co. of Fairmont, W. Va., is spending several thousand dollars installing many modern innovations for brick manufacture. Thomas I. Brett, manager, is supervising the work. Steam will be substituted for gas in the dryers, and the boilers are being equipped with the most modern type of mechanical stokers, making their feeding an easy matter. Steam-driven power equipment is also being used to load clay into cars, and to haul cars from the bank to the crusher. An adjacent mountain stream has been dammed to provide water for the plant. To eliminate delays in the handling of coal, a new bin with a capacity of three railroad cars is being built with appliances for unloading two cars at once.

OVERHAULING PLANT

The Stephen Construction Co., of St. John, N. B., has taken over the Lee brick plant at East St. John and is overhauling the plant and installing new equipment. The land includes 25 acres with a half mile frontage on Courtenay Bay.

* * *

The Vancouver (Ont.) Brick Co., Ltd., Suite 1, Union Bank Bldg., has been incorporated with a capital of $150,000.

* * *

Hepworth (Ont.) Silica Pressed Brick Co. is contemplating the erection of a plant at Elliott's Point.

* * *

REDUCING COSTS WITH A KENT MIXER

Owing to lack of space the following item did not get into the special cost cutting number of Brick and Clay Record, but because it contains information which is valuable and interesting, it is published herewith. The item was sent in by the Kent Machine Co. in response to a questionnaire sent out by Brick and Clay Record.

"We have your letter of November 28 relative to the special cost cutting number of your December 27 issue of the Brick and Clay Record," writes the Kent (Ohio) Machine Co.

"In the spirit of your fourth paragraph,, we are submitting herewith a photograph showing installation of a Kent continuous mixer used for the mixing of sagger material for use in making saggers at the Shenango Pottery Co., New Castle, Pa. This continuous mixer supersedes hand labor in the mixing of the sagger material and has proven a great saving in expense involved in the mixing process. We believe the photographs, together with the explanation that follows, will enable you to get a clear idea of this machine and its use.

"The purpose of our machine is to proportion automatically and accurately the materials used in making saggers; then thoroly mix the dry materials before they are conveyed into the pug-mill where the final mixing and tempering takes place. The mixer is a continuous type of machine in which the measuring of the materials in the desired proportions, the feeding of the materials into the mixing trough, the mixing and discharging of the mixed materials, are all automatic and continuous operations. The only labor necessary in operating the machine is that which is required to place the materials in the hoppers. Each hopper is fitted with an adjustable feed gate and by properly adjusting these gates

BEST GRADES
NEW JERSEY REFRACTORY CLAYS
FOR

FIRE BRICK—Various grades to suit requirements.

SAGGERS—Clays that will stand wear and tear of pottery use.

SANITARY WARE—Top Sandy Clay.

FOUNDRY USE—Red Spotted Clay.

STOVE LINING—Red Spotted and Blue Sandy Clay.

FIRE MORTAR—Ground Fire Clay especially prepared.

Forty years successful experience in catering to above requirements.

The **ANNESS & POTTER FIRE CLAY COMPANY**
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CALDWELL
Service

HALF a million dollars' worth of well-selected stock, constantly maintained and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

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LINK-BELT COMPANY, OWNER
CHICAGO, 17th Street and Western Avenue
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ATLAS EXPLOSIVES
USED ON BIG JOBS EVERYWHERE

Atlas Non-Freezing overcomes the difficulties experienced in cold-weather blasting. It will not freeze under ANY condition. It will not cause headaches from handling. Hundreds of users of their own accord have written us letters stating their appreciation of this explosive. It is the explosive of today. Tell us what explosives you now are using and we will tell you what grade of Atlas Non-Freezing to use for your work.

ATLAS POWDER COMPANY
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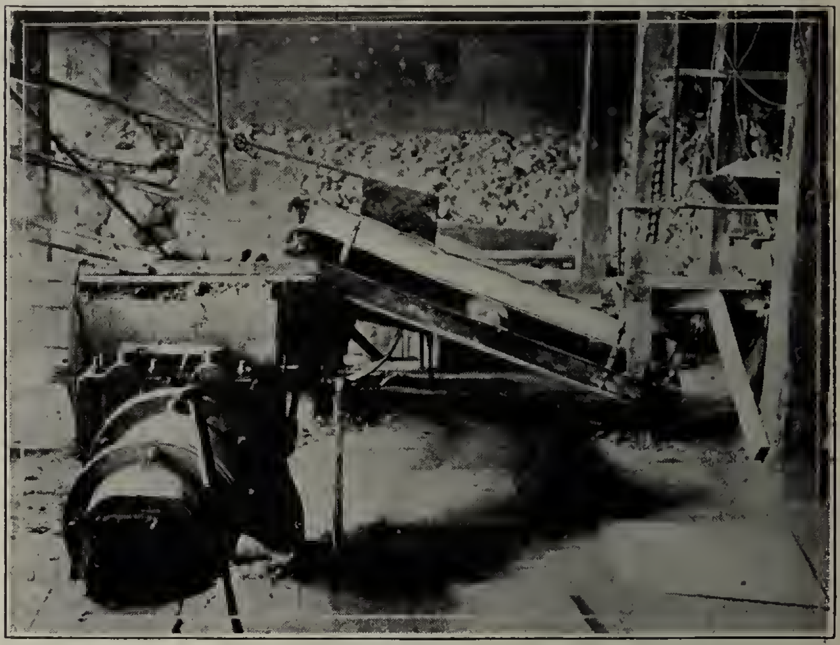
Branch Offices:—Allentown, Pa.; Birmingham, Ala.; Boston; Chicago; Houghton, Mich.; Joplin, Mo.; Kansas City; Knoxville; McAlester, Okla.; Mexico City, Mexico; New Orleans; New York; Philadelphia; Pittsburg, Kans.; Pittsburgh, Pa.; Pottsville, Pa.; St. Louis; Wilkes-Barre.

A PROPER EXPLOSIVE FOR EVERY BLASTING REQUIREMENT

it is possible to get any desired proportion of the materials being used.

How the Mixers Work

"The hoppers of the mixer are so constructed that the material when placed in them rests on a flat feed plate. This plate has a horizontal motion backward and forward and at each forward stroke a certain amount of the material in each of the hoppers is carried out into what is called the throat of the hopper. As it is carried out into this throat the material in the hopper settles down and prevents it from being carried back into the hopper on the backward stroke of the feed plate. Consequently, on each stroke of the feed plate a certain amount of each of the materials is dropped into the mixing trough. As before mentioned, the correct proportioning of the different materials is obtained by setting the adjustable gates on the throat of the hoppers.



A Pottery Sagger Mixing Machine Which Supplants Labor.

"The mixing trough is about ten feet long and in this trough there is a square steel shaft on which there are bolted specially designed paddles, or mixing blades. The action in the mixing trough is very similar to that which takes place in a pug-mill, except that the mixing paddles are more numerous and since the shaft revolves about 74 times per minute the materials are very thoroly and uniformly mixed before being automatically discharged from the machine. A lever is provided at the rear of the mixer by the use of which it is possible to regulate the output of the machine. This is accomplished without in any way changing the proportions of the different materials and also without stopping the mixer. This is a decided advantage as it is possible in a moment's time to change the output of the mixer to suit the capacity of the pug-mill, sagger making machines, or other equipment in the plant. The mixer is furnished with either three or four hoppers, to suit our customers' requirements.

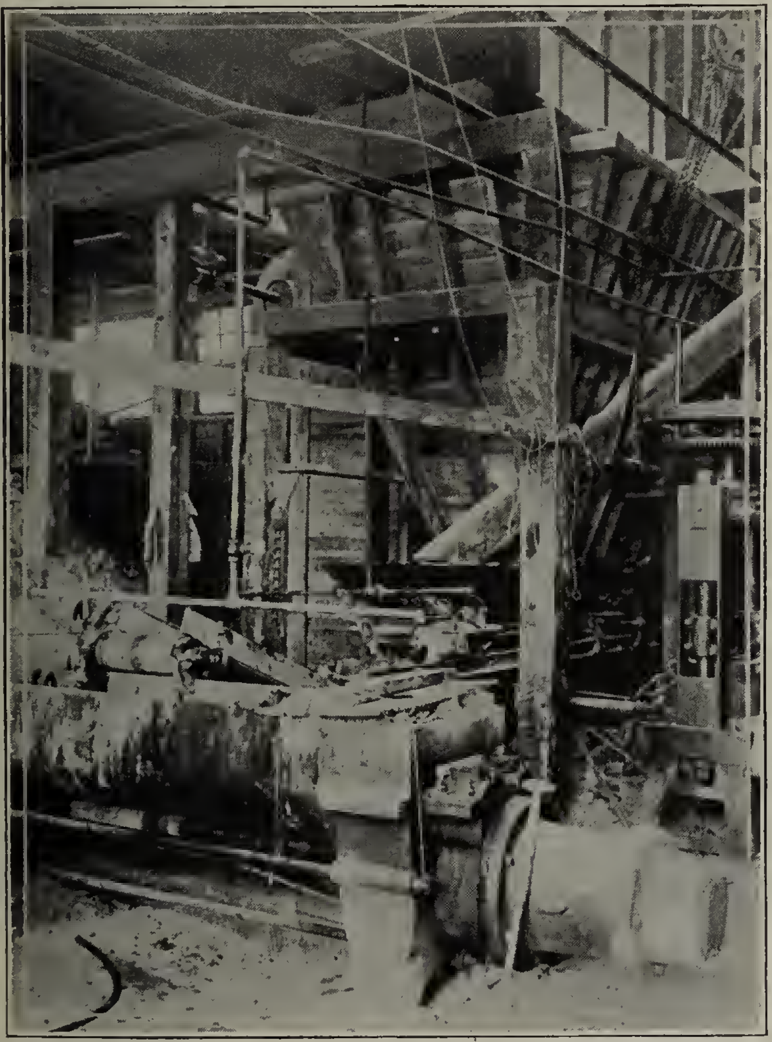
Installation at Shenango Plant

"To assist us in our explanation of the manner in which the mixer is used, we will refer to the enclosed views of the Shenango Pottery plant. In this plant they use three different materials in making the saggers—plastic clay, non-plastic clay and grog, in proportions of 30 per cent. plastic, 20 per cent. non-plastic and 50 per cent. grog. The grog is made from broken saggers ground to pass thru a one-fourth inch screen. The broken saggers are ground in an ordinary clay mill on the main floor and a bucket elevator deposits this material on a rotary screen on the second floor. Any of this material that is too large to pass thru the one-fourth inch screen into the large bin shown in the upper center of view No. 2, is carried by a chute back down into the mill, where it is reground.

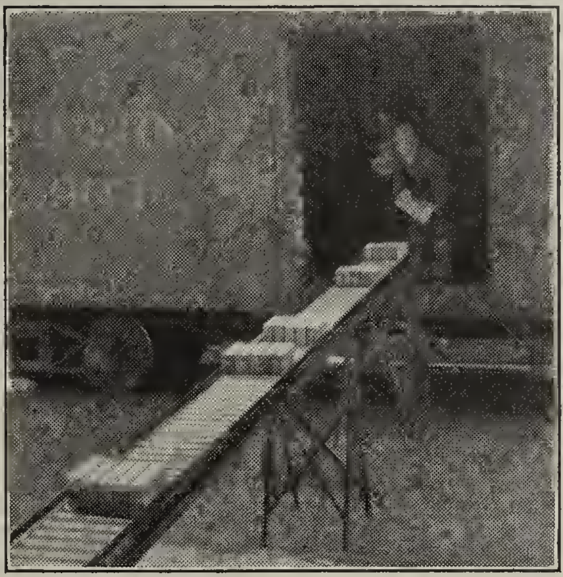
"The clay as it is received at the plant is shown in the background of No. 1. This clay is sufficiently dry to permit it to be broken in a small crusher or breaker. It then passes from the crusher into the boot of a chain bucket elevator. This elevator deposits the clay in the large bins shown in No. 2, which were built directly over the hoppers on the mixer, with the exception of the bin containing the grog. This material runs by gravity thru the long spout into the hopper on the machine.

"With the bins filled with materials the mixer requires no attention whatever beyond starting and stopping because, as before mentioned, it automatically proportions the materials, feeds them into the mixing trough where they are thoroly mixed, and then discharges it onto the belt conveyor shown in No. 1. This conveyor deposits the mixed material into the pug-mill, where the final mixing and tempering takes place. The material is then ready for use either in the sagger-making machines or by the men who make the saggers by hand.

"In the opinion of Mr. Smith, president of the Shenango Pottery Co., the most important result accomplished by our mixer is the fact that the mixed sagger material is always uniform. In making saggers in a machine it is necessary that the material be approximately the same all the time in order to get the best results. Next in importance is the great amount of labor saved by using our mixer. By the old method of putting up soaks by spreading one layer of material on another, and then wetting the whole mass and mixing it with shovels, it was not only very difficult to accurately proportion the materials, but it was also exceedingly difficult, on account of the nature of the materials, to properly mix them ready for the pug-mill. It also required considerable labor to shovel the material into the pug-mill. By using the Kent sagger material mixer all this labor and the uncertainty regarding the proportions of the various materials is eliminated."



Showing Installation of a Sagger Clay Mixing Machine Designed to Facilitate Pottery Operations.



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Clay Plant Construction and Operation	4.00
Clays: Their Occurrence, Properties and Uses	5.00
Clayworkers' Handbook	6.50
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Machinery and Equipment

Descriptions of Machinery and Accessories and Detailed Announcements That Our Advertisers Believe Will Interest Our Readers

THIRTY-TWO YEARS OF PROGRESS

J. C. Steele & Sons, Statesville, N. C., in their new catalog (No. 33) call attention to the fact that it marks the entrance upon their thirty-third year in the manufacture of brickmaking machinery. Each year as it has passed has witnessed new inventions and improvements to their machinery, the latest addition (as mentioned in the December 27 issue) being the moderate priced drag-line excavator.

The new catalog not only tells about this excavator, but also their full line of stiff mud brickmaking machines and appliances which have been serving the clay industry for years. While the bulk of their business is in the South, yet it is to be noted that Steele machines have been placed in almost every state of the Union, as well as foreign countries.

Brick machines, hollow block machines, cutters, distintegrators, crushers, pug mills, feeders, dry pans, the Steele system of drying brick,—all these and other machines are illustrated and described in the new catalog. They will be glad to send you a copy.

⁂

52 PAGES OF LABOR SAVING

The Columbus Conveyor Co., Columbus, Ohio, has issued a catalog which illustrates in a general way their line of labor-saving machinery, such as for elevating, conveying and coal storage.

Each page shows a photograph or two of Columbus equipment in use, working efficiently and saving money.

Care has been taken also in the selection of the paper stock and the quality of printing, and the 52 pages of the catalog are well protected by a heavy durable cover. It gives you the feeling that Columbus equipment is carefully built and durable.

⁂

LOTS OF COLOR IN THESE BRICK

The above is a cut of the new $1,500,000.00 building of Montgomery Ward & Co. in Portland, Oregon. This handsome nine story structure is constructed of re-inforced concrete and faced with Red Brick furnished by the Shope Brick Company of that city. Two hundred and fifty thousand pounds of Ricketson Red Mortar Color, or twenty-five tons were used in the coloring of these brick.

The firm of Montgomery Ward & Co. of Chicago is the pioneer mail order house of America. Extensive buyers of all sorts of materials in the world's market, alive to quality and values, it speaks words of boundless confidence and praise, that for their big new building on the Pacific coast, they should, after most severe tests have chosen a brick colored by the well known Ricketson Red which is known thruout the building world for its non-fading qualities.

BRICK *and* CLAY RECORD

Established 1892. Now in its twenty-ninth year.

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Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland
Address all communications to home office

Chicago, January 24, 1922
Vol. 60 No. 2

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

The Impending Coal Strike

A MATTER of greatest concern to a clay plant operator right at this time is the coal mining situation, and the probable events that will occur when the present contract between the miners and operators expires on March 31. Forecasts of a coal miners' strike, beginning on March 31, are growing in certainty. Opinions vary as to what is likely to happen, but these are facts.

The miners will resist full wage cuts and will do so most strenuously. The operators, on the other hand, will demand a wage no greater than that paid to miners in the non-union competitive fields. Operators would rather stop mining than to compromise, since competition is keen in the coal business, and in order to operate at any profit the wage costs must be no higher than those of competing mines.

Moreover, the operators would really welcome a shut-down, and they are not worried much as to how long the mines remain closed. They feel that they may just as well not operate at all as to pay high wages and find no market for their high-priced coal.

The altered economic condition of this country and of foreign countries is forcing a readjustment. Economic forces stronger than any union or any organization of operators eventually will bring acceptance of readjustment in the coal mines. A strike will fail because high wages and high prices in the mines and on the markets, and on the operators' balance sheets, have helped reduce American factories to a state of coma, where they make no demand for coal, which would strengthen the miners' position.

On or about April 1 the country will find itself in some such shape as this. The season for domestic coal users will be practically at an end, and the demand from this source will be petering out at that time of the year. Due to the greater length of the day and milder climatic conditions, public utilities will need less coal for lighting and heating. This applies to both electric light and gas companies. The above large users of coal will hence not be vitally affected by a coal strike coming in the spring of the year, altho of course they will still require fuel.

Contrasted to this is the clay products industry, which just at that time will be preparing for spring operations on a large scale. Everyone is looking towards the construction industry as the first to rise out of the mire of industrial stagnation and go full steam ahead. The clay products industry manufactures articles of basic requirements in the building field. Hence the clay industry will be called upon to furnish a great quantity of building material in April, May and June, and to be hampered by a lack of sufficient coal or by a stampede in prices, such as occurred but a few years ago, would be very discouraging to say the least.

The coal operators will eventually win the strike, and a reduction of wages will undoubtedly be reflected in a reduction in coal prices. Thus the manufacturer is confronted with a problem of whether he should buy coal at present prices and store a 60-day's supply, and thus be assured of continuous operation, or whether he should await the outcome of the strike and take a chance on lower coal prices with a probable interruption in operation.

* * *

An Association Activity of Vital Concern

DOES IT PAY to advertise? The subject is almost as old as the word advertising.

When applied to our own industry at this time, this topic cannot help but make an extra impression on the minds of the editors of Brick and Clay Record. It is our hope that every branch of the clay products industry will continue its forceful, truthful and well planned dissemination of propaganda for the best and oldest of building materials.

For those who still doubt, let the fact be brought to their attention that it is the face brick division of all the branches of the clay products industry that is today enjoying the nearest to normal business. Without any intention to submit anything but constructive criticism, this branch of the industry has spent more money per manufacturer than any other group of clay products manufacturers.—But ask any member of the American Face Brick Association if it has not paid him.

Two other associations that merit credit along these lines are the Common Brick Manufacturers' Association and the Hollow Building Tile Association. In spite of the dull 12 months that we have just passed thru, ask any of the members of these associations what they think of their investment.

During the past two years there has been more money spent to advertise clay products than, we venture to say, in the previous 20 years. Is it not because of this extensive advertising by the various branches of the clay products industry that so many people today are thinking of building brick or tile houses?

It may seem as tho there has been an enormous amount of money spent for advertising brick and tile, and in comparison with previous years this is true. Nevertheless it is a fact that outside of the clay products industry there are many individual concerns that have spent more money for advertising substitute products than the entire clay industry has spent for clay products propaganda.

We do not say this to discourage operators in the least, but if you want to be a prosperous manufacturer you must see to it that the oldest and best building material is also the best advertised, and thereby becomes known as the oldest and best building material to the public in general.

Our study of the matter has convinced us that advertising clay products pays. In fact, results—a good many of them of course still intangible, have proven this conclusively.

Advertising has paid well the members of the American Face Brick Association. It is coincident that most of the plants that are running thru the winter months are those manufacturing the better grades of face brick. Answering the opening sentence of this editorial—It does pay to advertise!

Next Issue Is Our Convention Number—Watch for reports on the N. B. M. A., C. B. M. A., H. B. T. A. Conventions.

Don't Forget the St. Louis Meeting

Common Brick Men Set for Opening Gun in "Biggest Convention"—New Ideas and Big Developments to Feature Common Brick Manufacturers Association Convention

PROBABLY NO CONVENTION in the history of common brick has represented more work in the preparation than that which will take place at St. Louis, Mo., January 30, 31 and February 1. That efforts will not be in vain can be seen by the advance interest shown by common brick manufacturers all over the country in the coming meeting of the Common Brick Manufacturers' Association. Each of the previous meetings of this young and healthy association has marked a tremendous forward stride in development by the industry.

According to all indications this year's meeting will surpass any of the previous ones in interest. At this meeting a new idea will be propounded by secretary-manager Ralph P. Stoddard, an idea which will directly stimulate sales of brick, and, as stated in an announcement sent out by the C. B. M. A., will remove instantly one of the barriers that has stood in the pathway of success.

The meeting will be of great interest to superintendents and will contain many features of interest to the production end of the plant. Manufacturers are urged to bring their superintendents to the convention if at all possible. That it is worth while to do this is proved by the fact that the Illinois Brick Co. of Chicago, largest common brick manufacturers in the world, is taking every one of its plant superintendents to St. Louis.

Many Interesting Topics

In other respects the program of the 1922 convention will be highly interesting and unusual. Sessions will open at 2 P. M., Monday, January 30. Tuesday and Wednesday there will be short sessions at 10 A. M. and 2 P. M. On Tuesday evening at 7 P. M. an informal dinner will be given at which speakers of national reputation will address the gathering.

Topics to be presented and discussed are:

Construction Outlook for 1922.
Local and State Organization.
National and Local Advertising.
Technical Research in Plants.
Inside Efficiency.
Bricklayer Cooperation.
National Convention 1923.
Government Tests on Brickwork.
Combating Brick Substitutes.
Elimination of Prison-Made Brick.
Ideal Wall Development.
New Contracts for 1923.
Election of Officers.
Mystery No. 3.

All those planning to attend the convention are urged to bring their wives or other relatives and friends of the fair sex. Special entertainment will be provided for all ladies attending the meeting.

Everyone should, when purchasing a ticket to St. Louis, buy a one way ticket only and get a certificate from the agent. It is no trouble to get the certificate and it may mean reduced fare on the homeward trip. If 350 certificates are turned in at St. Louis, only half fare will be charged for the return trip. Be sure to take advantage of this opportunity and get a certificate from the railroad agent whether you will want to use it or not.

"I've Been Thinking It Over, Clara, and I've Decided, Business or No Business, I've Got to Go to That Convention and Keep in Touch with Things. And You're Going With Me."

"I'm So Glad, John. You Know You Always Come Back With So Much Enthusiasm, It's Easily Worth All the Time and Money."

The Most Important Thing at the St. Louis Convention is the Little Fellow in the Question Mark. What Is This Big Mystery? The Two Wise Men Have Grown Old Endeavoring to Solve the Message on the Tablet. Success Has Crowned Their Efforts at Last and the Message Has Proved to Be of Tremendous Importance to the Common Brick Manufacturer of Today.

PRAISE FOR THE MODERN BRICK

Under the caption "Brick These Days Are Works of Art," appears an item in the Independence (Kas.) Daily Reporter giving unstinted praise of the modern brick. Colors and textures are lauded as "a thing of joy for your artistic sense." The item follows:

It is quite evident the manufacture of brick has passed the crude commercial stage and has become an art, if the samples shown in the city hall front yard are to be used as products for judgment in this particular line. The brick are walled for about a distance of two feet and are being shown as possible building material for the new Junior High School and Memorial Hall buildings.

In days gone by, and they are not so far distant, a brick was—well, just a brick. Useful for building, paving and possibly as Irish confetti. The ordinary layman looked on a brick as a cake of clay baked and browned until it presented the bright red appearance of a beet, or possibly a sickly brown such as might have been the popular color of "tooth-pick" shoes.

But the brick of today! Ah, there is a thing of joy for your artistic sense. There don't seem to be any more of those icy-slick brick of yesteryear. Instead, one finds a surface as hectic as the profile of a cream puff. Baby mountains drop off into miniature yawning canons and chasms that all work into an appearance of loveliness. These done in the dark red rose tints or possibly a shade or so darker than wistaria represent the quintessence of the dainty art of making brick.

This is not all in the modern color scheme, either! Once upon a time it would have been the proper thing just to mix the mortar and let it go at that. There was no tearing of hair if a brick took up a homestead for life, settled comfortably between layers of dirty gray mortar that clashed with the fiery redness of the old time manufacture. Today a brick is somebody in the community. It's as much as a contractor's life is worth to permit any indiscretion in the use of mortar. A brick that has virtually all the radiant qualities of an opal must be nestled amidst suitable color surroundings. There must be a blend that to the eye presents a vision "as mellow as the moonlight."

Can you imagine those old time tads or micks, wicked hod-slingers, handling the modern brick? Why, the old terriers would have to be wearing a wrist watch with a highly scented handkerchief stuck in the sleeve of a tuxedo, if they expected to keep company with the brick of today.

No more of that dropping a brick from the top of an 80 foot ladder and using it again. If the price of a lone brick has increased as much as it has improved in appearance, the busting of one brick would be equal to a half day's wage.

Probably monogrammed in neat Old English "Art for Art's Sake" may be found somewhere on an up-to-date brick. At any rate, one of these fine days some brick manufacturer will blossom forth with that as his slogan. The plebian days of brickdom have passed.

A VALUABLE COMMERCIAL REGISTER OF U. S.

The 1922 edition of Hendrick's Commercial Register of the United States is now ready. This makes the thirtieth year of publication for this valuable buyer's and seller's guide of the entire country. The new book has been greatly improved. A larger page has been provided with wider spaces between columns for notations or other purposes, and more matter is included on each of the 2,300 pages. Its lists completely cover the electrical, engineering, machinery, building, manufacturing, chemical and similar industries. The larger page makes a thinner book, and consequently, more easily handled. It is a volume which every business man should possess.

Drain Tile Men See Big Possibilities in Ohio

WHILE there was not a great deal of optimism shown by manufacturers of drain tile at the Fifth Annual Meeting of the Ohio Drain Tile Association, held in Columbus January 18 and 19, still a large majority believed that 1922 would be a good year in many ways. Manufacturers to the number of 40 out of a membership of 65 attended the meetings which were replete with interesting features.

The committee on arrangements, consisting of W. P. West of Columbus, J. C. Polling of Ada and J. D. Rumsey of Stryker, had a varied program. In fact Mr. West as chairman arranged a number of interesting features including a smoker, a banquet, a wrestling match, music and card tricks.

President C. H. Hilty of Ada made a report of the year following the registration of the members. Secretary C. J. Polling rendered a report showing an increase in the membership during the year. The association is in excellent shape in every way and a membership campaign will be started under the auspices of the new officers.

Prof. F. W. Ives Gives Fine Talk

The feature of the meeting was the address by Prof. F. W. Ives, head of the agricultural engineering school of the Ohio State University on "Agricultural Engineering and Its Relation to the Drain Tile Business." He showed that in 44 counties of the Buckeye State draining of land has progressed to within less than four per cent. of completion. The table of counties as to their condition of drainage is as follows: 44 counties from 0 to 3.9 per cent.; 11 counties from 4 to 7.9 per cent.; 17 counties from 8 to 11.9 per cent.; five counties from 12 to 14.9 per cent., and 11 counties more than 15 per cent.

Prof. Ives showed the damage done to growing crops from imperfect drainage. A survey of the state covering the year 1917 showed that only one acre out of every seven of cropped land was completely tile drained. In the same year one acre in every six that was planted in crops failed to pay the cost of the seed and labor, due to poor drainage. In all 100,000 acres of Ohio's richest soil have never been touched because of their swampy condition.

Most Factories in Operation

Drain tile manufacturers were very much disappointed over the refusal of the Ohio Utilities Commission to reduce the rates on drain tile in the action brought several months ago. For the time being the matter will not be pushed but later on another action will be started for reduced rates.

Reports showed that most of the drain tile factories are in operation and that sales are fairly good. Many factories are shipping rather heavily.

Officers elected for the coming year were: W. W. Lewis, North Baltimore, president; R. S. Dingledine, Columbus, vice-president; J. D. Rumsey, Stryker, treasurer and W. P. West, Columbus, secretary. The secretary's office will be removed from Ada to Columbus. The board of trustees consists of the officers and Leo Childs, Findlay; J. H. Wilson, Perrysburg; Gus Wehwinger, Ottawa; B. C. McDougall, North Robinson and Harry Van Clever, London.

The next meeting which will be the regular quarterly session will be held at Lima in April.

Burning a Scove Kiln with Wood

Second of a Series of Articles on Setting and Burning in Up-Draft Kilns—This Article Contains Valuable Information on Firing with Wood

By Elias Petts

BEFORE STARTING your fires, open up about seven rows of the platting, lengthwise of the kiln, by setting up every fourth brick in each row, opening the first row in the center of kiln and then three rows on each side of this about three feet apart. This gives the water-smoke a chance to escape, and increases the draft when starting fires.

It is not a good plan to open the platting too close to the sides of kiln, as this part dries off first, and if the roof is very close to the top of the kiln, it will get hot and have to be removed before the middle of the kiln is in condition to have the roof removed.

I have found it a good plan to put the roof on endwise, as shown in the sketch, if kiln is not too long. This makes it possible to remove the boards on each side, where the kiln first gets hot, without exposing the center, where it heats last, to the weather.

Start Fires Slowly

Now start the fires with a very light fire in each arch, and if there is any wind at all, start them first on what sailors call the leeward side, and let these fires get started before starting the other side; otherwise, the smoke and dampness will blow thru from the windward side and make it almost impossible to start the fires.

Do not put your four-foot stick of wood over halfway in at first, and keep only two or three sticks in each arch, or as little as will burn at all, as you want at this stage just as little fire as you can have, so as to prevent damaging the arch brick by too rapid heating of same. As the ends of these sticks burn off, you can push them in until they are entirely consumed; then lay the ends of other sticks on the coals left from the first sticks, and continue to repeat this operation.

Keep a close watch on the arches to see that you are not heating up too fast, and thus damaging the brick. This precaution may not be so necessary if you know that your clay will stand rapid heating without any bad results, but if the clay has not been burned before by this method, it is a very wise thing to go slowly on the first kiln. After you have burned one kiln, you may be enabled to heat more rapidly on the next kiln, and may continue to do this until you have reached the limit of safety for your particular clay.

Proceeding With the Fires

The condition of the brick when set will have much to do with the rapidity with which you may push the fires. If the brick have been set very dry, the fires can be pushed much faster than if the brick are set damp.

After you have had the fires going 12 to 24 hours, depending, of course, on the condition of the brick as above stated, you may begin to push the wood a little farther in each time a new stick is added, until finally you put the whole four-foot stick of wood in the arch as soon as it is placed in the fire; then a little later, begin pushing back the pieces that are left, and putting new wood in the mouth of the arch; in this way, you gradually work the fires toward the center from each side.

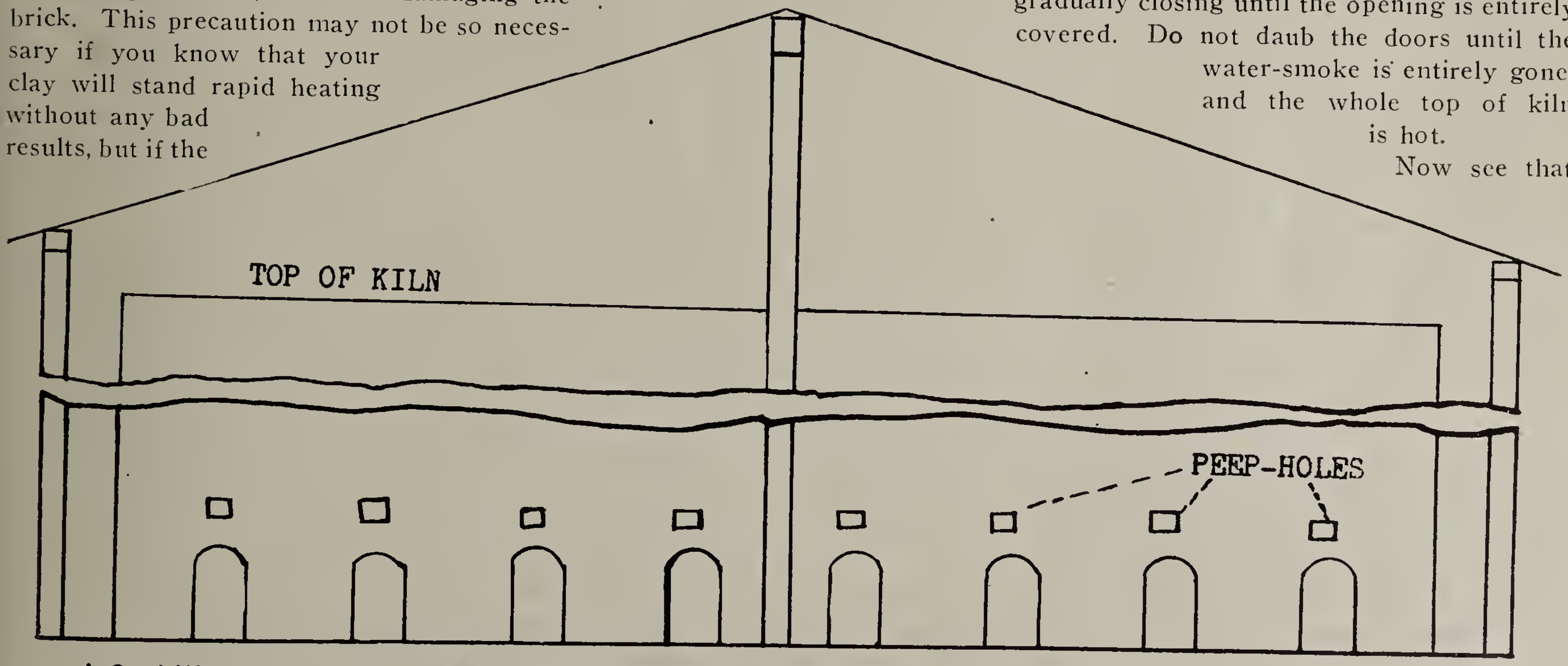
You will need a rod, or pike pole it is sometimes called, made of 7/8 inch round iron, with which to push the wood into the kiln. It is better to have two of these, a short and a long one, ten feet and sixteen feet, respectively, and they should have a hand-hold on one end and be sharpened at the other to stick into the wood; when the wood is pushed to place, it can easily be shaken loose and drawn back ready for the next stick.

Close down the platting on top as kiln dries off.

Use Iron Doors to Check Draft

Doors of light cast or heavy plate iron should be ready to use as kiln begins to heat up, for you will find as the kiln begins to dry out, the draft will increase and it will be necessary to check same by partly closing the doors at first, and then gradually closing until the opening is entirely covered. Do not daub the doors until the water-smoke is entirely gone, and the whole top of kiln is hot.

Now see that



A Good Way to Arrange a Scove Kiln, Setting the Roof Endwise. This is Quite Possible if the Kiln is Not Too Long.

your platting is tight all over the kiln; by this time, the wood should be burning well across the entire arch. If the wind is blowing against one side of the kiln, put in a good fire on this side, pushing the first stick to the center; continue adding sticks, pushing one against the other and then fill the mouth of the arches tight; next daub around the doors in this side to keep out the air, first setting your doors up on two brick, one laid at each side of the door, which will leave an opening under the bottom of door. If the wood burns well, pile dirt or ashes over this opening, and then let in just enough air to make the wood burn, and no more.

Do Not Daub Doors Until Hot

Just here, let me emphasize something about doors. Never daub them until they have been on long enough to become well heated; if you do, the cast doors will crack, and if you use plate for doors, they will swell up like a toad, and you will have a badly shaped door. If cast doors are used, have a little projection cast on them, so that they may be handled with a shovel or hook. If plate doors are used, bend a small section of same over outward at the top with which to lift the door.

Keep this side of the kiln mentioned above daubed for about six or eight hours, and do your firing from the opposite side, sliding the wood over as far as possible, and pushing one stick against the other until you arrive at mouth of arch on open side, then fill this mouth as tightly as you can and set the doors up as closely as they will go without daubing; and continue to keep this mouth filled tightly all the time.

Watch the arches thru the peep holes to see that they are heating evenly, and not getting too hot in places.

Do not open the daubed doors until it is necessary to fire that side again, and then daub them again just as quickly as you can put in the wood.

Getting Fire to the Top

Continue this method for six to eight hours; then change to the opposite side; in other words, daub the open side and open the side you first daubed, firing on the latter side; repeat this operation every six or eight hours, until fire begins to appear on top of kiln.

By this time, the center of kiln should begin to settle, that is, if your clay shrinks in burning, which is usually the case, but some of our friends in Louisiana and Mississippi can tell you that all clay does not.

Continue this cross firing until the center gets a good start. If your clay settles nine inches, two inches would be a good start, and when the center has this much lead of the sides, keep one side of the kiln daubed and as hot as the arches will stand until that side and the center are almost down to the final settle, let it be nine or ten inches, or whatever is required to give you a good burn.

Procedure During Settling

While you are settling this side, you must keep up all the heat possible on the other side, and carry the settle as closely as possible to the open side of the kiln; in other words, settle one side and as much of the center as you can, with the side you settle first; this leaves a short center and the other side to settle last. This method gives you an advantage, as you can let in more air on the open side, and drive the fire up the opposite wall. *Do not let this air in too suddenly*, however, or you will damage the arches on the side that is burned. It will be necessary to keep up the heat on this side until the kiln is finished, but it will not settle any more, unless you overheat or melt it.

Keep the center hot until the other side and balance of center has finished settling.

Try to keep the fires at as even a temperature as you can, so that the kiln will settle as level as possible.

All Cracks in Scoring Must be Closed

Keep the scoving well daubed at all times. A good way to keep it tight is to take an old broom and thin slush, and close all cracks that appear. This should be looked after day and night while burning, and if this is done, it is really surprising how close you can burn out to a four-inch scoving. Of course, you will have to watch the scoving very closely, as the pressure of the heat and the settling brick may push it out of place. Plenty of props should be on hand so that at the least sign of a bulge, a prop can be put in place to prevent trouble. This is especially essential where brick in a scove kiln settle to any great depth, and the writer has seen some kilns which, when finished, looked like a centipede, they had so many props. For this reason, we do not advocate burning in scoving, even if you do burn wood, any longer than you can arrange to put up permanent walls.

The writer has in mind one good brick manufacturer in the South, who had used scoving for years, contending that walls cost too much, and who, after being induced to try one kiln with walls, declared he had been very much mistaken and was not satisfied until he had sufficient walls to take care of his output.

In a later paper, we hope to say more about kiln walls.

Arches Must Not Get Too Hot

As soon as you start the kiln to settling, you must keep a close watch on all the arches thru the peep holes to see that none of them gets too hot, and should any arch get hot enough to be in danger of melting, let in more air on the open side of this particular arch until this heat has been scattered which it will soon do when the door can be closed again. Let me again say that this must be watched very closely, as a melted arch means trouble for the rest of the burning period.

Should one or two arches reach the required settle before the rest of kiln, do not stop firing them nor daub them, but keep in them just enough fire to prevent them chilling, and leave the doors undaubed. If you daub them, the fire will steal from the unfinished arches into those already finished, thus robbing the former of the heat they need.

Watch the settle on top, as well as the heat in the bottom, as the top is a good indication of what is going on in the bottom.

Finishing the Burn

Keep the top tight, and close all cracks that may appear in the platting by spreading with a spade any loose places, and then laying a row of brick over the crack thus made. This saves wood and gives you better control of the fire.

While the flame may run out of the loose platting a foot high, it does not burn any brick after it reaches the platting, and more than that, the heat is getting away at the top faster than you can generate it at the bottom, and that is why you hear a burner say, "That (the top) is the hottest place on the kiln, but it won't settle." While the tight platting does not look so hot, it settles faster because the heat is retained where it is needed.

After you have both sides settled, let your wood burn out well before daubing up entirely, or some of the arches may become too hot after you have closed the kiln; then when the kiln is ready daub up all doors and let it cool slowly, as this makes the brick stronger and better in every way.

ROAD DEVELOPMENT IN 1921 EXTENSIVE

During the last year Pennsylvania built 670 miles of hard surface highways, taking first place among the states of the Union, Illinois following with 412 miles. New York State was third with 367 miles, and Wisconsin a close fourth with 340 miles. According to Clifford Older, chief highway engineer of the state, the program for Illinois in 1922 aims at a total of 1,000 additional miles, completely paved and ready for use.

Canadians Plan Big Meeting at Toronto

Topics of Varied Interests Will Be Discussed by Prominent Ceramic Men at Canadian National Clay Products Association Convention-Invite Americans to Attend

JUDGING from past experiences and by what is actually in store for those attending, this year's convention of the Canadian National Clay Products Association will rival any of the previous meetings held. Altho the dates for this convention were originally announced as January 24, 25 and 26, these dates have been changed, due to the fact that the National Brick Manufacturers' Association will meet at that time at Indianapolis. The new dates set are February 7, 8 and 9. All members and friends of the Association are asked to note them carefully. The dates were changed in the hope that it would increase the attendance of American manufacturers, and the C. N. C. P. A. is hoping that there will be a large attendance from south of the border. A cordial invitation to attend is extended to all manufacturers in the United States.

Like last year, the headquarters of the convention will be at the Carls-Rite Hotel in Toronto, where convention facilities have always been found very satisfactory.

Topics Will Be Very Interesting

Glancing over the program for the three day sessions, one is impressed with the large number of interesting and valuable subjects which will be discussed. In arranging the program the committee has aimed to select such subjects as would be of direct interest to the delegates from the standpoint of clay manufacturers. Many phases of the field will be covered.

F. L. Ferguson, B.S.A., of the Ontario Agricultural College at Guelph, will present a paper entitled "Field Tile in Canadian Agriculture," which should be of great interest to drain tile manufacturers. Another paper which should prove of value to the drain tile manufacturer is "Making and Marketing Drain Tile," by H. H. Hallatt, of the Tilbury (Ont.) Brick & Tile Co. Ltd. Due to his long association with this type of clay product, Mr. Hallatt is eminently qualified to speak on this subject. Following his paper there will be a discussion which will be opened by Murray Dillon, of the Port Dover (Ont.) Brick & Tile Co.

An article which is sure to prove of interest will be presented by a representative of the International Business Machines, Ltd. of Toronto, under the title "Time and Cost Recording." Supplementing this paper there will also be a demonstration of the various accounting machines.

Will Discuss Clay Conveyors

R. B. Morling, secretary of the Industrial Accident Prevention Association, will read a paper on "Industrial Safety," a topic which has always aroused considerable interest among clay manufacturers.

What will undoubtedly prove to be one of the valuable papers will be that presented by William Burgess, superintendent of the Don Valley Brick Works, Ltd. on "Handling Clay With Conveyors." It will be remembered that this company has recently installed a new conveying and storage system, and therefore in his talk Mr. Burgess can cite facts from his own experience. An opportunity to visit the installation at the Don Valley Brick Works will be given to any who care to make the trip.

One of the topics which at present is uppermost in the minds of all progressive brick manufacturers, is the subject of burning in continuous kilns, and no convention program would be complete without a paper bearing on this topic. Therefore, George Booth, of the Booth Brick & Lumber Co. Ltd., Islington, Ont., has been secured to speak to the delegates on "Tunnel Kilns." To further exploit this topic, an officer of the American Dressler Tunnel Kilns, Inc., Cleveland, Ohio, will discuss the burning of face brick at the plant of the Bradford (Pa.) Brick & Tile Co. This paper will be made more interesting by moving pictures. It is quite probable that W. S. Kupfer, president, and Louis Wilputte, chairman of the Board of Directors, of the American Dressler Tunnel Kilns, Inc. will be guests of the Canadian convention.

W. G. Worcester to Address Meeting

A paper which will unquestionably be of great interest will be presented by W. G. Worcester, professor of ceramics at the University of Saskatchewan, Saskatoon. Mr. Worcester is a graduate of the Ohio State University Ceramic Department, and was connected with the Alberta Clay Products Co. at Medicine Hat and more recently with the Standard Brick Co. of Crawfordsville, Ind. Last summer Mr. Worcester headed an expedition under the auspices of the Bureau of Labor and Industries, Saskatchewan, into more or less unexplored parts of the province. This expedition investigated clay deposits and the possibilities of these deposits in Saskatchewan. Many million tons of clay which is undeveloped and unworked was discovered on this trip. On account of his knowledge of the industry, Mr. Worcester's paper will unquestionably be worth while.

Two papers of a technical nature are scheduled. They are, "Burning Coal in Kilns," by E. C. Hanson, consulting engineer, Toronto, and a paper on "Pyrometers" by M. B. Hastings of the A. H. Winter-Joyner Co. Ltd. This latter paper will be illustrated with moving pictures.

American Manufacturers Welcome

In addition to those mentioned, there are several others who are expected to contribute papers but since arrangements have not been definitely concluded, announcement of these will be made at a later date.

President Ryland H. New is hoping to see a large delegation of friends from the States at the Canadian National Clay Products Association convention. All attendants will be cordially welcomed and made to feel at home. It is hoped that at least 50 delegates from south of the border will attend the Canadian convention. Last year there were about 30 U. S. delegates, and it is hoped that this year that number will be exceeded. Toronto is very convenient to many of the clay centers in the country, especially Detroit and Buffalo and also to Ohio.

Good Program for Annual Banquet

According to present indications, there will be a goodly representation of Canadians at the Indianapolis meeting of the National Brick Manufacturers' Association. Among the Canadians who will visit Indianapolis during the convention are Mr. and Mrs. William Burgess, H. Buske and K. Stillwaugh. They will carry with them a message of good will to American brick manufacturers.

On Wednesday evening, February 8, the annual banquet of the Canadian National Clay Products Association will be held in the large main dining room of the Carls-Rite Hotel, which will be the convention headquarters during the meeting. Among the speakers at the banquet will be A. Munro Grier, K. C., recognized as one of the leading Canadian orators. C. A. Millar, chairman of the entertainment committee, states that a good program has been prepared and that time will not hang heavily on the hands of those who come. Music at the banquet will be contributed by the orchestra, Miss A. L. McLean and Jules Brazil.

The rates at the Carls-Rite Hotel are very reasonable. American plan: rooms without bath, including all meals, $5 per day per person; room with private bath with all meals included, $6 per day per person. European plan: room without bath, $2.50, per day per person; room with private bath, $3.50 to $4 per day per person.

The officers of the association are Ryland H. New, Hamilton, president; Gordon C. Keith, 435 Grace St., Toronto, secretary. The dues of the association are extremely low, a year's membership, including the literature issued and the annual proceedings, being only two dollars.

* * *

COAL OUTPUT SHOWS BIG DROP IN 1921

Estimates of production of the bituminous mines of the United States during the year just ended show a total of 470,000,000 net tons, according to figures compiled by the Geological Survey. In its report of last year's output the Survey says: "The year 1921 was one of prostration for the coal and coke industries. The figures of tonnage sound like those of an earlier day. To match the 470,000,000 tons of soft coal produced, one must go back ten years. To match the 26,000,000 tons of coke produced, one must go back 17 years. But those tonnage comparisons are not enough, for they ignore the normal increase from year to year. To match the completeness of the depression of 1921, one must go back to 1893."

* * *

1922 HOLLOW TILE OUTLOOK BRIGHT

The hollow building tile outlook for 1922 is reasonably bright, according to E. R. Sturtevant, secretary of the Hollow Building Tile Association, which includes manufacturers from New England to Texas in its membership.

"There is every indication of a quickening demand," says Mr. Sturtevant in the New York Commercial, "which seems to increase month by month, so that we expect by the spring of 1922 to be running nearly at capacity. This is true of the Eastern and Middle Western territory.

"Conditions in Iowa, Kansas, Nebraska and Missouri are dependent on a solution of the financial problem of the farmers, and it is hoped that the War Finance Corporation will bring this about.

"The situation in the South is governed somewhat by the same limitation, and it is hoped and expected that as the new year comes along these difficulties will be solved and 1922 will be a year of very great activity for manufacturers in this industry."

* * *

New York Common Brick Price Jumps — Hudson River Supply Shut Off — Big Demand Evident

COMMON BRICK and linseed oil show price changes over the week-end, says the Dow Service daily building report of January 14, 1922.

January price advances in the building material market have, in the past foretold general price lifting tendencies. The last notable upward price shifting cycle had its beginning in January, 1915. It lasted until approximately the middle of 1920, being in full action about 4½ years. It preceded the price slump which is apparently nearing bottom, or has already turned upward.

If building material price trends were still downward, it would be because building material requirements were slack. So far the demand for basic building materials is extremely active, considering the season. Hudson common brick in the week ending January 13, passed from the wholesale market to actual building construction jobs at the rate of 9,200,000, or 23 barges, in spite of the snow and difficult riding conditions, leaving only 8,000,000 brick still remaining in the winter reserve stock at the foot of West 52nd St., New York, or approximately 20 barges.

Brick Jumps to $15

In the face of such a demand, with the source of Hudson River brick shut off from this city by ice bound waterways, manufacturers withdrew quotations Friday morning, at $14 to $14.50 wholesale. Individual owners were quoting $15 flat, for good grades of brick, altho up to that time Raritans had been selling below the former level.

Brick, when it is not being purchased for dealer stocks, is a fairly safe barometer of the general building material movement. There is no general disposition at this time to stock brick. Neither is there any general tendency to "cover" brick barges for late winter market demand. Such a price movement, if it is forced by general building material market demand, would doubtless be reflected in other departments, such as lumber, which, in certain lines, has already turned upward.

Portland cement is in a stronger market on the current list quotations. In other words, there is less price-cutting among dealers, who seem to be closely following the $2.80 base, retail.

Cut-Throat Competition Less

Freight rate adjustments have had some slight effect upon the price of building stone in this market. Structural steel is being sold, apparently with the idea of filling the maw of hungry mills, and attractive business is being sought at prices below the market.

Unlike the first half of January last year, there is no general price cutting movement of building erection and equipment commodities. There is less cut-throat competition in the eastern market as a whole, than there has been in many winters. Frozen credit is a thing of the past, as far as present outlook is concerned. The general building construction situation, with the exception of labor compensation, is closer to actual stabilization than the market has known in more than half a decade. There is an ample supply of basic building materials for any requirement short of a general building boom between now and the end of the first half of the year. General business disruption due to political upheavals, seems at this time remote. General confidence is coming back fast.

Workers Preparing for Fight Against Open Shop

United Brick & Clay Workers Union Claims Growth of 200 Per Cent in Few Years—Official Says "Common Enemy" Will Be Fought

ATTACHED TO A BULLETIN dated January 11, sent out by the National Clay Products Industries Association, is a statement by William Tracy, secretary-treasurer of the United Brick & Clay Workers of America, which is a response to an inquiry by Frank Morrison, secretary of the American Federation of Labor. The statement is on the subject of the outlook for the coming year, and should give every clay products manufacturer food for reflection and thought, as it gives a good insight into the ideas and purposes of organized labor in the clay industry.

The statement follows in full:

"The situation in the clay industry of America, both organized and unorganized in so far as the operation of the plants and clay mines is concerned, is no different from that of the entire period of the war. Business at that time was very dull with the possible exception of the fire brick industry, which enjoyed several years of prosperity due to the activity of the steel mills, where the major portion of the product was consumed. Those employed in the making of building products were naturally hit hard as building was held up during the war. Construction work was of the temporary type and since clay products are used for permanent construction only, the demand for them was at a minimum.

Union Grew Stronger During War

"The United Brick & Clay Workers made substantial progress during the war period only thru united effort and the assistance of organized labor in general. Attempting to perfect an organization in an industry which was 50 per cent. normal was a real job and one which has given every member a real test. We produced nothing aside from fire brick that was needed to carry on the war. The companies had little business at the most and as a result we have strikes on hand of 2½ years' duration.

"Since the armistice was signed, there has been little, if any, improvement in the building industry, but the demand is there and can not much longer be withheld. When building again revives, it will be of the permanent construction type, the kind that demands clay products. Thereby not only a normal business is assured, but an increase over that of normal measured by the five years' construction delay caused by the war.

Claim 25 Cents Is Maximum Pay

"Our union has passed thru one of the worst depressions in the history of the clay industry, but it has come out of that condition 200 per cent. stronger in numbers and with, I am sure, a better understanding of the movement and those things for which the trade union movement stands. True, we now face the handicap of industrial courts, injunctions which prevent even peaceful picketing, and the many other things that can be devised by both state and national administrations antagonistic to organized labor, but to meet this added handicap the clayworkers will have a complete revival of the industry. With wages of the non-union workers in the industry cut to a mere pittance ($1.75 a day, ten hours, is common, with 25 cents an hour the maximum in nearly ever instance), we are sure of a united response to membership from that source. This membership was denied us during the war by the non-union workers who thru our efforts were granted the eight hour day and increased wages, in some cases exceeding wages paid in union plants after years of struggle and sacrifice.

Preparing to Fight "Common Enemy"

"During the past year every organization has been put to the test, and while there have been locals temporarily crushed and thereby a drop in membership was caused, the lesson has been well worth the price. Thru this test the men and women of labor have been brought together in a better understanding. Spies have been uncovered and the traitors of the movement have been exposed as never before. Petty jealousies have been scrapped in preparing to fight the common enemy. I firmly believe that while we are facing the most critical period in the history of the American labor movement we will emerge more closely united in a movement free from spies, traitors and politicians who have used the movement in the past for their own common interest and not for the common good. Even tho we may be smaller in numbers, we will have a real foundation upon which to build, and with the non-union workers clamoring for admission into the organized ranks due to the deplorable conditions which are being forced upon them, why be other than optimistic as to the final result?

"The success of the labor movement and its failures have been brought about by the toilers themselves—united always successful, divided at times a failure. The bosses have applied t lash. The non-union worker seeks relief which can be secured only thru organization and that means the toilers will be united in the struggle for right and justice. 'THEN WATCH US GROW.'"

CONVENTIONS IN PROSPECT

January 23, 24, 25, 26, 27 and 28—National Brick Manufacturers Association, Claypool Hotel, Indianapolis, Ind.

January 25 and 26—Nebraska Brick and Tile Association, Lincoln Hotel, Lincoln, Neb.

January 30, 31 and February 1—Common Brick Manufacturers Association, Hotel Statler, St. Louis, Mo.

February 7, 8 and 9—Canadian National Clay Products Association, Carls-Rite Hotel, Toronto, Canada.

February 15 and 16—Iowa Clay Products Manufacturers Association, Des Moines, Ia.

February 27, 28, March 1 and 2—American Ceramic Society, St. Louis, Mo.

February 28 and March 1—Wisconsin Clay Manufacturers Association, Republic House, Milwaukee, Wis.

A. S. T. M. PROCEEDINGS AVAILABLE

Copies of the proceedings of the 24th annual meeting held in Asbury Park, N. J., June 21 to 24, 1921, of the American Society for Testing Materials have been printed and are now available, in book form. These proceedings cover the reports of all the various committees, results of tests made during the year, and copies of interesting technical papers. The volume is available at the following prices: $10 in paper, $11 in cloth, $12.50 in half leather binding.

Snappy Items on Subjects

INDICATIONS POINT TO BIG A. C. S. MEETING

A seven-ring circus all under the same roof will be the nature of the 24th annual convention of the American Ceramic Society at St. Louis, February 27 to March 3 inclusive. Reservations at the Hotel Statler should be made now.

The American Ceramic Society is composed of seven divisions, devoted respectively to terra cotta, heavy clay products, glass, refractories, enamels, whiteware and art. The seven divisions will meet separately for three sessions and there will also be three general sessions.

The list of papers to be presented at the meeting, colloquiums to be held in the form of discussions on the program are so many and so varied that anyone interested in any department of the silicate industries will find something especially arranged for him during the convention. Subjects for 99 papers are already at hand, and more than 40 topics for colloquiums and discussions.

One evening will be a purely social one, and the old and well remembered Section Q meetings will be emulated. This will be on Monday night, February 27, and altho called a smoker, will be much more, ending with a dance. A surprise for each and all is in store.

For Tuesday evening, a banquet at a nominal cost has been provided for, and a new feature will be introduced that will captivate all. Ladies are cordially invited to attend, and special entertainment has been provided for them by the local committee.

CANADIAN CUSTOMS RULINGS MODIFIED

Regarding the new Canadian Customs ruling, a report received from Canada states that the following articles are not required to be marked: rough lumber, dressed lumber, marble and stone in the rough, face brick, rough brick, enameled brick and tile, hollow building block; also sheet metal, steel for reinforcing, and structural steel.

COST OF LIVING DOWN 20 PER CENT.

Comprehensive investigation of changes in the cost of living since 1914, according to a bulletin sent out by the National Industrial Conference Board of New York, shows the total cost of living for the country as a whole has fallen 20.3 per cent. since the peak in July, 1920, but in November, 1921, was 63 per cent. higher than in July, 1914. The cost of shelter and fuel and light was shown to have increased, food, clothing and sundries decreased since the peak. Between July, 1920, and November, 1921, average rents advanced seven per cent. and the total increase in rents between July, 1914, and November, 1921, was 69 per cent.

ADVOCATE 20-FOOT HIGHWAY AS STANDARD

What will unquestionably prove to be of great interest to all interested in highway development, is the decision of the American Road Builders' Association during the Good Roads Show at Chicago to push the adoption of a 20-foot highway as standard. A resolution to this effect was presented to the Association on January 20 and reads as follows:

"Whereas, it is the experience of road engineers that 18-foot highways used by more than 1,000 vehicles a day are not adequate to present needs and,

"Whereas, the shoulder maintenance of 18-foot highways generally exceeds the original cost of the additional two feet necessary to make a 20-foot highway, on which the shoulder maintenance costs are low; therefore,

"Be it resolved that the American Road Builders Association go on record as favoring the 20-foot standard for highways on all trunk lines or other roads used by more than 1,000 vehicles of all types a day, or roads used by more than 500 trucks a day."

Experience with the 18-foot surface, which is the Illinois standard, has proved not only inadequate in serving the growing requirements of heavy motor traffic, it is said, but also excessively high in maintenance costs. Testing engineer E. B. Smith of the U. S. Bureau of Roads has also indicated his preference for the 20-foot surface.

In Massachusetts the 20-foot highway is now standard, and will shortly be increased to 26 feet, according to chief engineer A. W. Dean of the Massachusetts Division of Highways.

WISCONSIN MEETING AT MILWAUKEE

The executive committee of the Wisconsin Clay Manufacturers' Association has decided to hold the 21st annual meeting of that organization in Milwaukee on February 28 and March 1, 1922. Headquarters will be at the Republican House. The program, which will be of special interest to Wisconsin clay manufacturers, is being prepared and interesting discussions and talks will take place. The railroad rate committee, which was in attendance at the hearing of the Railroad Rate Commission at Madison, December 22, 1921, will make a report at the convention regarding adjustment on brick rates in Wisconsin.

Every brick and tile manufacturer of Wisconsin should attend the convention to keep in touch with happenings within his own state and with the problems directly confronting the Wisconsin clay men.

N. J. CLAY PRODUCTS VALUE INCREASES

Clay and clay products form the greatest mineral industry in the State of New Jersey, and according to official figures recently compiled for the year 1920, all branches of the business had a total value of production of $41,789,619 in this period, an increase of $14,165,178 over the preceding year. The greatest gain was made in the manufacture of sanitary ware, aggregating 65 per cent., while in the line of general pottery the increase in production for the year totaled 50 per cent. Brick and tile to the value of $15,535,376 were produced in the State during this year, or more than $5,306,000, as compared with the figures for 1919, and $7,337,394 greater than in 1918.

GOODS ROADS SHOW SUCCESSFUL

In number of exhibits, amount of actual business transacted, and enthusiasm displayed, this year's Good Roads Show at the Coliseum in Chicago by far surpassed the 1921 exhibition. Exhibitors at the show are quite optimistic, and state that a large amount of business was done at this year's exhibition, probably exceeding any of the previous five years.

Several exhibits of interest to the paving brick industry occupied space. As in former years, the Dunn Wire Cut Lug Co., of Conneaut, Ohio, had an exhibit, consisting of a section of brick pavement. The brick for this display were furnished by the Veedersburg (Ind.) Paver Co.

The National Paving Brick Manufacturers' Association also had a booth and was well represented during the period of the show. Maurice B. Greenough, secretary of the national association. William C. Perkins, chief engineer

# of Current Interest

of the Eastern Paving Brick Manufacturers' Association, and M. W. Blair, of the Murphysboro Paving Brick Co., spent considerable time at the exhibit.

Other interesting exhibits were those of the U. S. Bureau of Public Roads, Washington, and the Highway Educational Bureau. The exhibit of the U. S. Bureau of Roads included models of the various types of road, brick, concrete, asphalt, and so forth.

Both from a point of view of attendance and amount of business transacted the Good Roads Show was a complete success.

REFUSES DRAIN TILE RATE REDUCTION

The Ohio Utilities Commission has refused to reduce the freight rates on drain tile within the limits of the Buckeye state, upon the complaint filed by the Ohio Drain Tile Association and others interested in the industry. The decision was rendered after the commission had the matter under advisement for several weeks. It was announced that insufficient evidence has been produced to cause the commission to believe that present freight rates are excessive. The complainants asked for a reduction of 28 per cent. on the rates, putting them back to the levels which prevailed previous to the 40 per cent. advance September, 1920.

IMPORTANT PAVING BRICK PAMPHLETS

Two important pamphlets may now be secured from the National Paving Brick Manufacturers' Association at Pittsburgh. They are, the brick pavement specifications for 1922 and the report of the simplification of variety and standardization of vitrified paving brick.

NOVEMBER PRODUCTION AND STOCKS

Figures on the country's production in November indicate increased activity over October in metals, clothing, paper and glass, according to a recent bulletin sent out by the Chamber of Commerce. A slackening of production in November was noted in foodstuffs, tobacco and fuels while an irregular condition existed in the construction industries. Commodities in the building material, clothing, tobacco and foodstuff groups were all being produced in greater volume than the 1913 average, except pork products, which were only one per cent. below. Stocks of commodities at the end of November, 1921, were in general slightly larger than in 1919. The largest relative stocks were those of corn and coal both more than five times as large, due partly to seasonal variation. Increases of from 50 to 100 per cent. occurred in wheat and cottonseed oil, both largely seasonal increases, and zinc, cement, face brick and petroleum.

COMMON BRICK OUTLOOK IS GOOD

"Today the proportion of orders on the books to stock on hand is 68.9 per cent. On January 1, 1921, it was 41.5 per cent.," according to the current Monthly Digest of the Common Brick Manufacturers' Association. "The outlook for the brick manufacturer," the digest continues, "is in every way more favorable than it was a year ago."

"The price of brick per thousand at the plant a year ago ranged from $14 to $28, while today the range is from $10 to $20, the higher price at this time applying only to the high grade brick made in New England, which are commonly used for facing purposes. The composite price today is $13.47, which is about 50 per cent. lower than a year ago.

"For the first time in the history of brick reliable data upon the strength and fire resistance of brickwork is being built up for engineering use. A nation wide effort is also being made to correct building codes in the cities where an excess amount of brick has been required, due to the lack of engineering knowledge of the material.

"A year ago the manufacturer faced a question mark, while now he faces a certain fair demand. No one is looking for a stampede, but all are hopeful that the improvement shown in the past quarter will continue thru the new year with a slightly increasing ratio."

GIVE IMPETUS TO $20,000,000,000 BUILDING PROGRAM

Business in general, and the building business in particular, will go ahead as soon as railroad management improves. This is the opinion of W. O. Winston, of Minneapolis, Minn., president of the Associated General Contractors, in Cleveland during the convention of that body.

More railroad construction is necessary for better business as a whole, in the opinion of Mr. Winston, but we cannot have that, he asserts, until there is less of government control. Mr. Winston has been a builder of railroads since 1879, and is now 69 years old. It is his contention that passenger and freight rates will not be lowered under government ownership or control, and that they are likely to be higher. As to costs of railroad construction, it is his opinion that they are much the same now, with modern equipment, as they were in the pick and shovel days, but on the other hand, the work is done four times as fast.

Mr. Winston heads a body of more than 500 contractors, whose principal aim in coming to Cleveland was to get under way, by various means, $20,000,000,000 worth of potential building for the nation, which leaders in the institution asserted is needed and waiting to go ahead. This work, they claim, is divided into one-quarter for housing, another quarter for railroads, and the remaining half into factory, road, public and waterway work.

NEW BUILDING BRICK MAKES ITS APPEARANCE

A new design of building brick, patented by C. L. Hutchison, Mobile, Ala., architect, is attracting the attention of the Southern building trade. The block was designed with the idea of preventing seepage thru the walls and, while simplifying the work of the brick mason, gives the appearance of ordinary face brick on the exterior. This brick, made of shale, is of hollow tile construction with two hollow outer chambers and a hollow central chamber, with a central projection above and a corresponding recess below.

TESTING STRENGTH OF FIRE CLAY BRICK

Experiments on 14 brands of fire clay brick to determine their durability and load carrying capacity in furnace arches are being continued by the Bureau of Mines. Fusion and permeability tests and chemical analyses are still to be made. Entire bung arches, of 40 brick each, were tested at the works of the Ohio Malleable Iron Co., at Columbus, Ohio, in a 40 foot furnace. The relation between serviceability and the resistance to load at high temperatures, spalling, density, porosity, chemical analyses, fusion temperatures, and permeability were studied. The results showed a close relation between the percentage loss on spalling and the serviceability.

Endorse Rolled Bases for Brick Roads

Excerpts from Report of U. S. Bureau of Roads After Thoro Survey of the Behavior of Brick Pavements on Rolled Gravel, Crushed Stone and Slag Bases

THE LAST ISSUE of "Dependable Highways," monthly organ of the National Paving Brick Manufacturers' Association contains some very interesting data from the recent government report on "Rolled Base Brick Roads in Ohio." In this report rolled bases for brick pavements are endorsed by government officials.

The report states that the following conclusions would seem warranted from the study of roads of the rolled base type in Ohio:

"The rolled base type, provided it is properly placed and compacted, is a suitable type for brick construction where soil conditions are favorable and good natural drainage may be obtained. Under these conditions a six inch compacted rolled base should be adequate, provided a two inch sand or screenings cushion is used.

"The rolled base may be successfully used under ordinary road conditions, provided the thickness of the base is adjusted to meet the probable traffic requirements. An eight inch to ten inch compacted base, with an additional two inches of cushion should suffice under all but trunklines highways subjected to very heavy traffic.

"Whenever a rolled base is used a bituminous rather than a grout filler should be employed in order to provide a flexible section thruout.

Asphalt Fillers Most Satisfactory

"In general asphalt fillers are more satisfactory than tar or tar-mastic fillers, owing to the tendency of the latter either to chip out or flow in hot weather leaving the edges of the brick unprotected.

"Very inferior material as measured by laboratory tests, may be successfully used as base material for brick roads."

Roads in various parts of Ohio which were inspected were found in many cases to have been subjected to very severe traffic conditions and in practically every case the wearing surface was in excellent condition.

Speaking of the road south of Chillicothe, Ohio, where the prevailing soil type is a gravelly loam which drains easily, the report says, "A tar-mastic filler was used and the six inch gravel base was constructed on an old gravel road. It has been under traffic about six years and is subjected to moderately heavy truck traffic. The surface is in excellent condition, the only defect noticeable being the tendency of the mastic filler to pull out of the joints. No evidences of foundation failure were observed."

Can Utilize Local Materials

One of the important and valuable features of the rolled base type of brick pavement is the fact that it provides an opportunity to use local material for the base course of the road which are of course considerably cheaper than the concrete base.

The flexibility of the rolled base type of brick road was aptly demonstrated by a section of this type of highway just east of Zanesville, Ohio, where the road was built over an 18 foot fill. A slight settlement in the road occurred at this point due to a movement in the fill. Had the brick surface been grouted any heavy traffic strain would undoubtedly have produced severe cracks. The only result noticeable, however, is a slight settlement, causing a somewhat uneven surface on the side of the road where the movement took place.

Commenting on the results of the inspection and the general use of the rolled base for brick pavements, the report states:

"The results of this inspection, supplemented by information obtained from various county engineers and others interested in the rolled-base type of construction, would indicate that it may be used successfully even under rather unfavorable soil and drainage conditions. Of course, like every other pavement type, best results have been secured when these conditions make possible a firm, stable foundation at all seasons of the year, such as may be obtained with a sandy soil in a gently rolling country where satisfactory. natural drainage may be secured. Under these conditions the rolled-base type is apparently giving satisfactory service even under heavy traffic, provided a flexible wearing surface is secured by the use of a bituminous filler.

Roads Stand Up Under Bad Conditions

"The statement would seem justified by the behavior of the roads in southern Ohio, especially in the vicinity of Camp Sherman, Ohio, where they carried very heavy traffic during the war. The six inch compacted gravel or stone bases of these roads seem to be adequate."

In conclusion the report says:

"Probably the worst combination of poor soil, and poor drainage with heavy traffic was observed in Trumbull County. Here the road ran thru a very flat country permitting almost no natural drainage, while the soil was a very heavy clay. In the face of such conditions it is remarkable that the road has held as well as it has."

* * *

PROGRAM FOR N. B. M. A. CONVENTION

Since the publication of the last issue of Brick and Clay Record, the program of the N. B. M. A. convention has been completed, showing the schedule of events at the various sessions. The opening session will be on Wednesday, January 25, at two p. m., when the usual formal proceedings will transpire. The second session will open Thursday morning at nine-thirty a. m. with the following papers and authors scheduled:

"Cutting Costs, Improving Products, and Increasing Capacity," E. W. McCullough, Chamber of Commerce, U. S. A.

"Drying Brick With Waste Heat From Up-Draft Kilns," A. B. Sturgin, Suffolk, Va.

"The Transmogrification of the Common Brick, Illustrated," Major E. Gates.

"Engineering as Practically Applied to the Brick and Tile Industries," Frank D. Chase.

Third session, Thursday, two p. m.:

"Expedition in the Cooling of Kilns," M. W. Blair.

"Handling of Wet and Limy Clay in the Manufacture of Drain Tile," George M. Krick.

"Importance of Sub-Drainage in Road Construction," W. P. Blair.

"Marketing Paving Brick," James R. Marker.

"Making Brick in Indiana," G. B. Luckett.

Fourth session, Friday, nine-thirty a. m.:

"Lessons of Fire Tests," S. H. Ingberg.

"Importance of Proper Appraisal of Clay Properties," H. B. Hall.

"Advantages and Disadvantages of a Tunnel Car System of Burning Brick and Tile," William L. Hanley, Jr.

"Making Brick in St. Louis," J. Stockey, Jr.

Fifth Session, Friday, two p. m.:

"Making Brick and Tile in Illinois and Missouri," Eben Rodgers.

"Economical Production and Handling of Building Brick," Raymond C. Penfield.

"Why Is a Sewer Brick?" H. T. Shelley.

The social features at the convention will consist of an informal reception and entertainment tendered by the Hoosier Committee on Entertainment on Wednesday evening in the Riley Room of the Claypool Hotel. The annual banquet will occur Thursday evening, and as in former years will be a subscription dinner under the auspices of the Executive Committee of the N. B. M. A. and the local Entertainment Committee. Among the speakers that it is hoped will address the meeting are: Vice-president Coolidge, Ex-Senator A. J. Beveridge, Governor McCray, Mayor Shank and the reigning Hoosier poet, William Herschel.

* * *

New York Proposals Governing Building Labor

RECOMMENDATIONS for proposed changes in the constitutions of building labor organizations that have been made by the Lockwood Legislative Committee of New York State, of which Samuel Untermyer is counsel, were recently presented, and it is expected that, as in the case of the Landis award in Chicago, the proposals will affect the entire labor movement in the building trades.

Some of these recommendations included the following features:

"All restrictions on membership of labor unions must be removed. The books must be at all times open for the admission of members who can qualify under reasonable regulations as to character and capacity.

"All limitations upon the number of apprentices in any trade must be repealed and prohibited. Where there is an age limitation for apprentices in existing constitution or by-laws, it should be increased from the prevailing ages of from 16 to 18 years to the age of 25.

"In order to protect the members of the unions against misappropriation of their funds, and to secure accountability to them by their officials for the use of such funds, the constitution should be amended wherever necessary, so as to require accurate books of accounts to be kept, in which shall be entered and accounted for all receipts and disbursements.

Unions Assume too Much Power

"It must be made plain by appropriate amendments that the unions do not possess the power that some of them are now assuming to exercise, to hale their employers before them and compel them to pay fines into the treasuries of the unions under penalty of being refused union labor. This is a conspiracy to extort money. Illustrations of instances of this kind appearing from testimony were:

"(a) Forcing employers to pay fines to the unions for failing to appear before the executive committee in response to the demand of the latter.

"(b) Fining employers because members of the union worked overtime for them for double pay, but without securing express permission in each instance from the executive committee.

"(c) Fining employers for allowing painters to fill in plaster cracks when painting the walls and ceilings, and so forth.

Difference Between Artists and Mechanics

"The constitutions of the building trades should be so amended as to preclude any union from intruding into the business and affairs of the employers, and so as to limit the jurisdiction and activities of the unions to matters that legitimately concern the welfare and betterment of the members. An illustration of this is:

"The unions in the building trades with which we are dealing do not include the fine arts. Plastering, carpentry, bricklaying and the like, altho highly essential trades, and perhaps more useful than artists, are still rated as mechanics and not recognized as members of the arts. They must accordingly abate their intrusions into the domain of art and must especially cease dictating to owners and architects as to the artistic style and character of work that are satisfactory to owners and architects and are approved as to safety and sanitation by the public authorities, who are appointed and paid for supervision.

"(The instance in which the owner of the new Ambassador Hotel was compelled by the executive committee of the Plasterer's Union to tear down a part of a wall in that hotel because a delegate, a plasterer by trade, reached the conclusion that the color and style of the imitation of Travatine marble did not suit his artistic taste, altho it was entirely satisfactory to the owner and to the architect, who is one of the most renowned in his profession in the country, fairly illustrates the extent of this abuse. In that case, owner and architect were in point of fact compelled to pull down part of this wall to meet the views of that hypersensitive delegate.)

Should Permit Labor-Saving Machines

"The prohibition by the unions of the use of improved machinery and approved methods tending to economy in building costs, on the ground that the demand for labor is thereby eliminated or decreased, should be promptly and effectively abated and provided against by appropriate amendments.

"There should be taken from the unions by amendment of their constitutions the power to prohibit their members from working more than five days per week, or the power of fining or disciplining them for working on Sunday and any legal holiday."

Other abuses were also mentioned and suggested changes made.

Some Unions in Favor of Changes

A group of labor leaders that attended a conference with Samuel Untermyer following the consideration of the above recommendations, promised a general reform in the practices of building trades unions. Those unions represented included the stone trades, boiler makers, iron workers, molders and painters, but the more important carpenter, electrical and metal trades were noticeable by their absence.

While all the recommendations made by the Untermyer committee were not considered favorably, it is felt that many reforms will be effected in the building trades unions following further consideration and discussion of the Lockwood Committee recommendations.

Life and Service of Periodic Kilns

Outlining Important Considerations in the Design and Construction of Down-Draft Kilns to Get the Most Out of Them, Both with Regard to Length and Kind of Service

By J. H. Kruson

Acme Brick Co., Fort Worth, Texas

SCATTERED over the great breadth of this land there are numerous kilns of the periodic type. Some of them have stood the rack of continuous operation and the severity of weather for a period of 15 years or more, and still are in better condition than a great number that were constructed less than half that many years ago and have experienced little usage.

Not before kilns are considered "as not just kilns," but as expensive pieces of brick plant equipment, which generally cost about as much to build and also to operate as the remainder of the plant equipment, and in which the most delicate and important stage of the manufacture is completed, will they receive adequate attention in their construction and operation.

Causes of Failure

If a kiln fails to give 12 or 15 years of good service without extensive repairs, the causes for its failure are attributed to various sources but these seldom accurately ascertained in order to prevent repetition of similar losses.

The location of the exact causes of failure can be determined by an analysis of: (a) The kiln design; (b) Construction; (c) Material used; (d) Banding or ironing; (e) Repairs; (f) Use.

The initial cost, the service rendered and the cost per unit of ware, and the percentage of depreciation which must **be** charged against each kiln per year, depends upon an intelligent understanding and use of the above factors.

Design Differs with Conditions

A specific type and design for a periodic kiln that is adapted to the conditions and ware on one plant may prove very uneconomical in one or more respects at an adjoining plant. Local conditions, fuel, clay, type of production and available labor are of prime importance in designing a kiln for any individual concern.

The ultimate aim in kiln design has been to produce a kiln which will burn the largest percentage of number one ware possible, with a minimum amount of fuel, burning period, labor and initial expense. The continuous types are the latest results of kiln design and the economy of their operation is unquestionable. However, too little attention has been given the periodic type, consequently many kilns are depreciating rapidly, turning out an inferior grade of ware with an accompanying high cost of operation.

The most essential portions of the periodic type are: (a) Furnaces; (b) Bottom; (c) Lining and crown; (d) Stack flue; (e) Stack.

Furnace Areas and Design

The size, design and number of furnaces and their accumulative grate area per kiln, is of importance not only in construction but in repairs, kind of fuel and necessary burning procedure required by the ware, as the heat should be raised as rapidly as the ware is capable of assimilating it. Furthermore, the heat should be supplied with the greatest possible fuel economy and with a minimum deterioration to the furnace.

There are different rules for calculating the grate area necessary for burning a product with economy, which tend to give fair estimates of the areas needed. Local conditions enter into the calculations and should be taken into consideration, as the following are average conditions: a grate area of one square foot to every seven or eight square feet of floor area for products which mature around 1,800 deg. F.; while for refractories the grate area should approach one square foot for every four or five square feet of floor area. The temperature range and kiln atmosphere required for salt glazing must be well under control and the ratio of grate area to floor area of 5½ to 8 square feet.

Ellis Lovejoy offers the following method for calculating the necessary grate area. Assuming a coal to contain 1,300 B. t. u. per pound and a desired kiln temperature of cone number one (2,102 deg. F.), the grate area necessary to obtain this temperature should be 1.5 per cent. of the cubic feet of setting volume of the kiln, and for each additional cone this area should be increased five per cent.

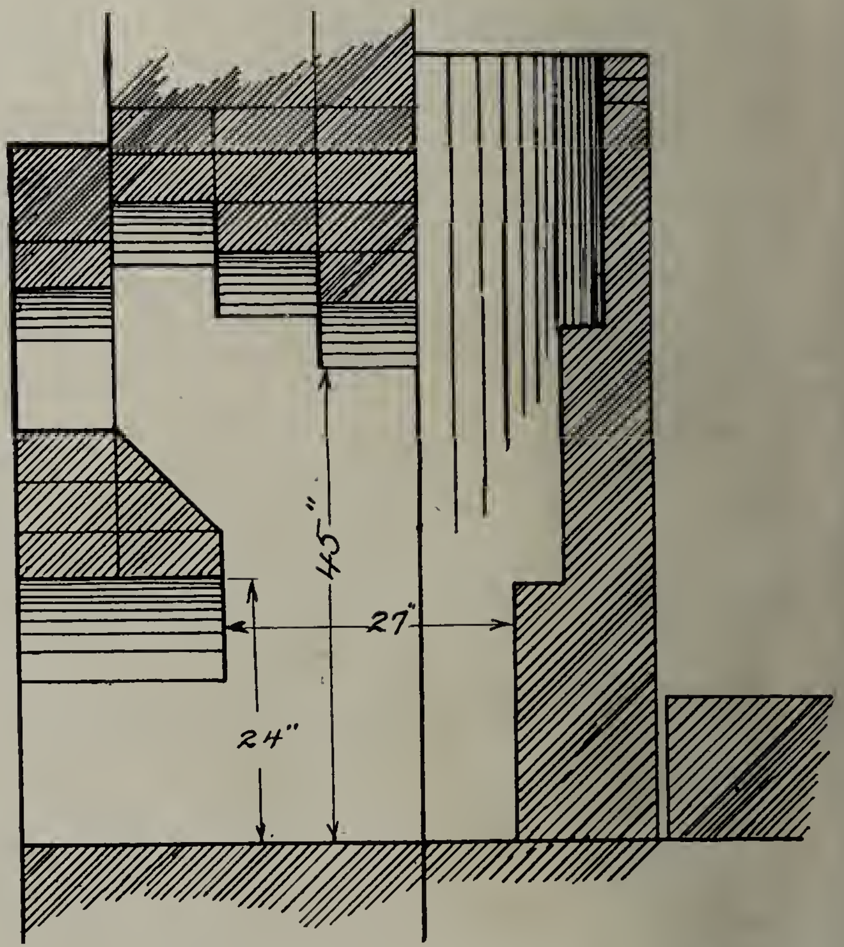


Fig. 1. Dead Bottom Type of Furnace with Coking Table.

The nature of the finishing period, whether reducing, oxidizing, or for salt glazed ware, the characteristics of the clay and fuel, have a direct governing relation between the grate and floor area, size and type of individual furnace.

Small, easily handled furnaces are essential, if good results are obtained by the average fireman, from clays which have a short delicate vitrification range. The horizontal type of furnace is well adapted to sensitive clays, requiring careful attention and oxidizing atmospheres; however, this type is also adapted to a wide range of conditions, and demands very close attention and an even, well kept fuel bed. Furthermore, more fuel can be consumed with greater economy in this type than either the dead bottom or inclined grate bar type.

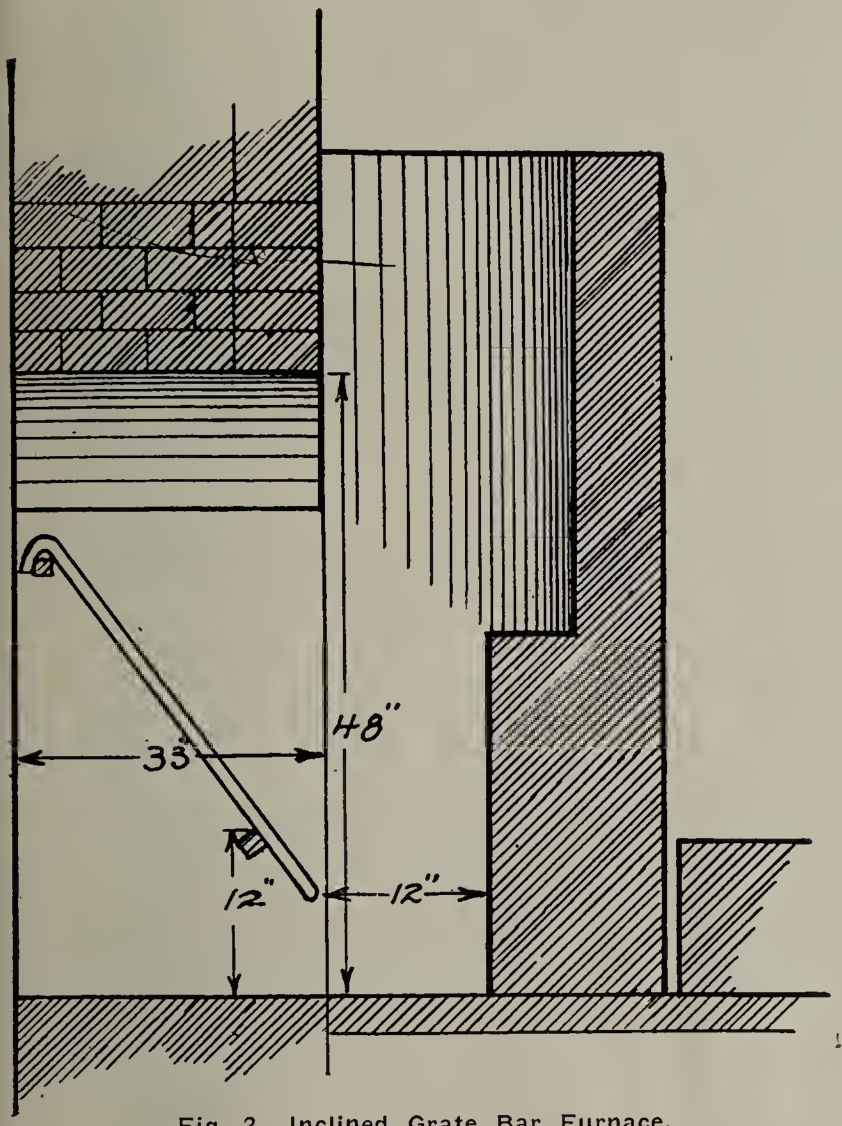


Fig. 2. Inclined Grate Bar Furnace.

The inclined and dead bottom types are extensively used for wares that are not harmed by flashing and also for salt glazed products. The thickness of the fuel bed tends to lessen the amount of air admitted into the kiln thru the furnaces; this also makes them more adaptable for flashed wares. The thick fuel bed and large amount of masonry work in contact with the burning fuel holds more heat than the horizontal types; which is a decided advantage in salt glazing, as the kiln temperature is held more uniform and the salt in vaporizing does not have an opportunity to run thru the grate bars and close up the openings as with the horizontal types.

Better Fuel Economy from Coking Table

Fuel should be fed on some sort of coking device where it gradually heats up, thus giving off some of its volatile matter before it comes in direct contact with the hottest portions of the fire. This tends to give an even flow of heat into the kiln and eliminates severe reducing conditions which may be followed by a short oxidizing period after the volatile matter has been driven off. These conditions are obtainable in the horizontal grate furnace, thru proper construction and firing.

The other two types, due to their design and thick fuel bed, gradually feed the clay down to the hottest portion of the furnace, where the fixed carbon is consumed. In doing this the volatile matter has an opportunity to escape with some degree of uniformity. Fig. 1 shows the dead bottom type with coking table. In Fig. 2, the inclined grate bar furnace is shown. The fuel in the front portions of the inclined grate type should be (as much as possible) shoved down on the bed of fixed carbon before a fresh charge is fed into the furnace. This allows the fresh fuel to be placed in the cooler area of the furnace. This procedure produces quite an extensive coking action.

Furnace Design Depends Upon Fuel and Ware

The interior design of the furnace should be so constructed that perfect combustion, or as near perfect combustion as possible, takes place. This requires that a thoro study of the fuel, its burning properties and characteristics be made, so the ultimate furnace will tend to maintain the requisites for effective combustion; namely, that a sufficient quantity of air be thoroly mixed with the combustion gases at as high a temperature as can be obtained, practically. However, in burning some clays at a high temperature, much combustion takes place around the ware and frequently as far away from the furnace as the stack. This combustion tends to produce a flash and where it is undesirable the combustion should take place in the furnace only.

Fig. 3 shows the most essential dimensions of a horizontal grate furnace, altho it will require some modification for existing local conditions.

The combustion area for gas and oil fired kilns may range from 20 to 40 per cent. smaller than for coal fired types, depending upon the tonnages set and temperatures reached.

The life of the bag wall is lengthened and more benefit derived from the fuel if the flame is directed against a brick or sand surface built in the bag at an angle so the flame is deflected upward into the kiln.

Furnace Crown Clearance

Ample clearance between the grate bars and furnace crown is essential, or the crown will be short lived if any high temperatures are reached. A clearance of 28 inches is generally necessary; however, 30 to 42 inches is a safe clearance and also allows sufficient room for combustion in the fire box.

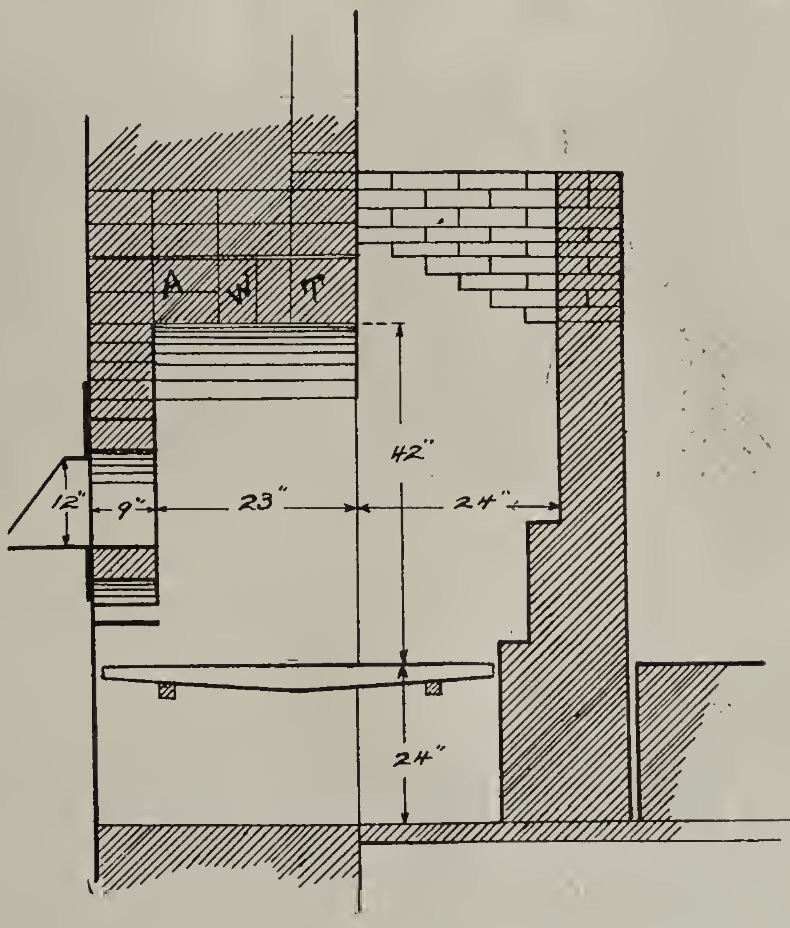


Fig. 3. Essential Dimensions of a Horizontal Grate Furnace. A—Arch Brick; T—Fire Clay Tile; W—Wedge Brick.

Considerably more expansion takes place in the furnace due

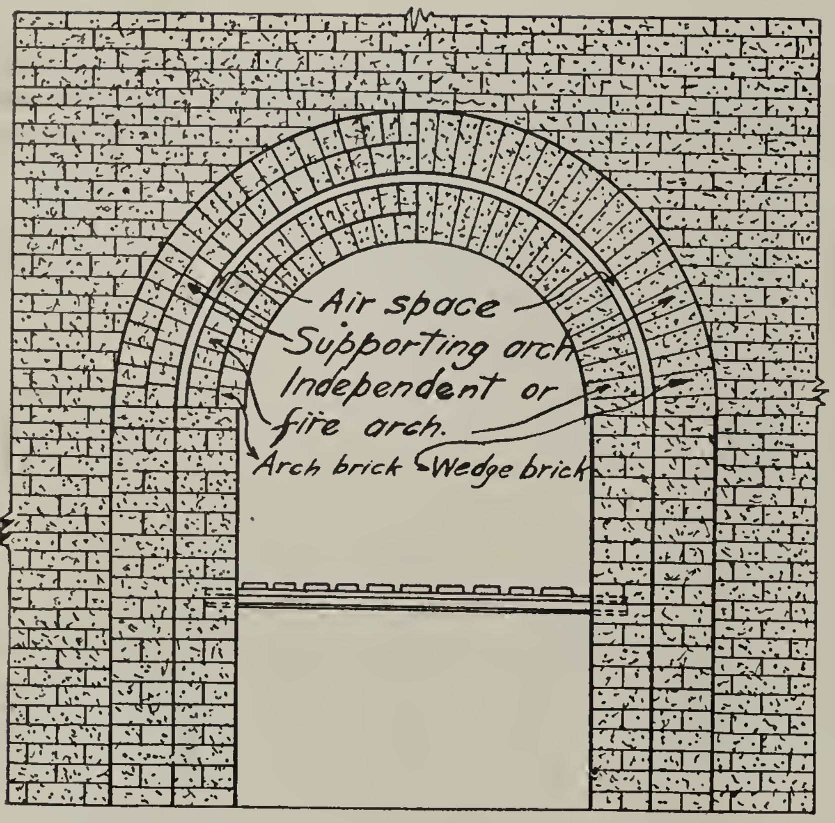


Fig. 4. Fire Arch Built Independent of Kiln Structure. Note Air Space or Expansion Area Between Furnace Crown and Arch Supporting Kiln Wall and Crown.

to the temperatures reached, when combustion is confined to the furnace proper, than in the brick work of the kiln walls. Also the furnace lining and kiln crown need frequent repairs. A furnace lining built independent of the kiln structure, as a separate unit, will save the kiln crown and walls from much abuse during the high fire period, and also when the furnace lining is partly burned out unable to carry a load without sagging and also, during repairs.

Fig. 4 shows a furnace with fire arch built independent of the kiln structure and with an air space or expansion area between the furnace crown and the permanent arch which supports the kiln walls and crown. An opening of one-half to three-fourths of an inch is sufficient distance between the two. The area may be filled with dry fire clay and the outside mortared up to prevent cold air from passing thru into the kiln.

Furnace Doors Assist in Regulating Excess Air

Many methods are employed to prohibit the outside air from passing over the fuel bed into the kiln. Fine coal is extensively used and with a varying degree of success. There are several kinds of fire clay doors—sliding type, hinged doors, suspended doors (from kiln band by wire) and also iron doors of different design.

In Fig. 3 an iron fire box front is shown, thru which the volume of air can be easily regulated by the firemen, eliminating all guess work. If the door is closed all circulation of air is cut off, except thru the fuel bed.

The average run of fire clay doors are cumbersome and ill fitting, allowing considerable air to be admitted around them. Excess air from over the fuel bed has a decided cooling effect upon the kiln temperature, tends to chill the combustible gases, and in many instances it does not materially assist in effective combustion and increased kiln temperatures.

Kiln Bottoms

At least a dozen bottoms, perhaps more, have resulted from an effort to produce the most economical bottom which requires:

(1) An even distribution of heat thruout the kiln.
(2) A strong even stack pull (draft) thruout the kiln.
(3) A bottom free from continual repairs.
(4) An easily accessible flue system for cleaning.

A very wide difference of opinion exists as to which type is best adapted for burning a specific kind of ware.

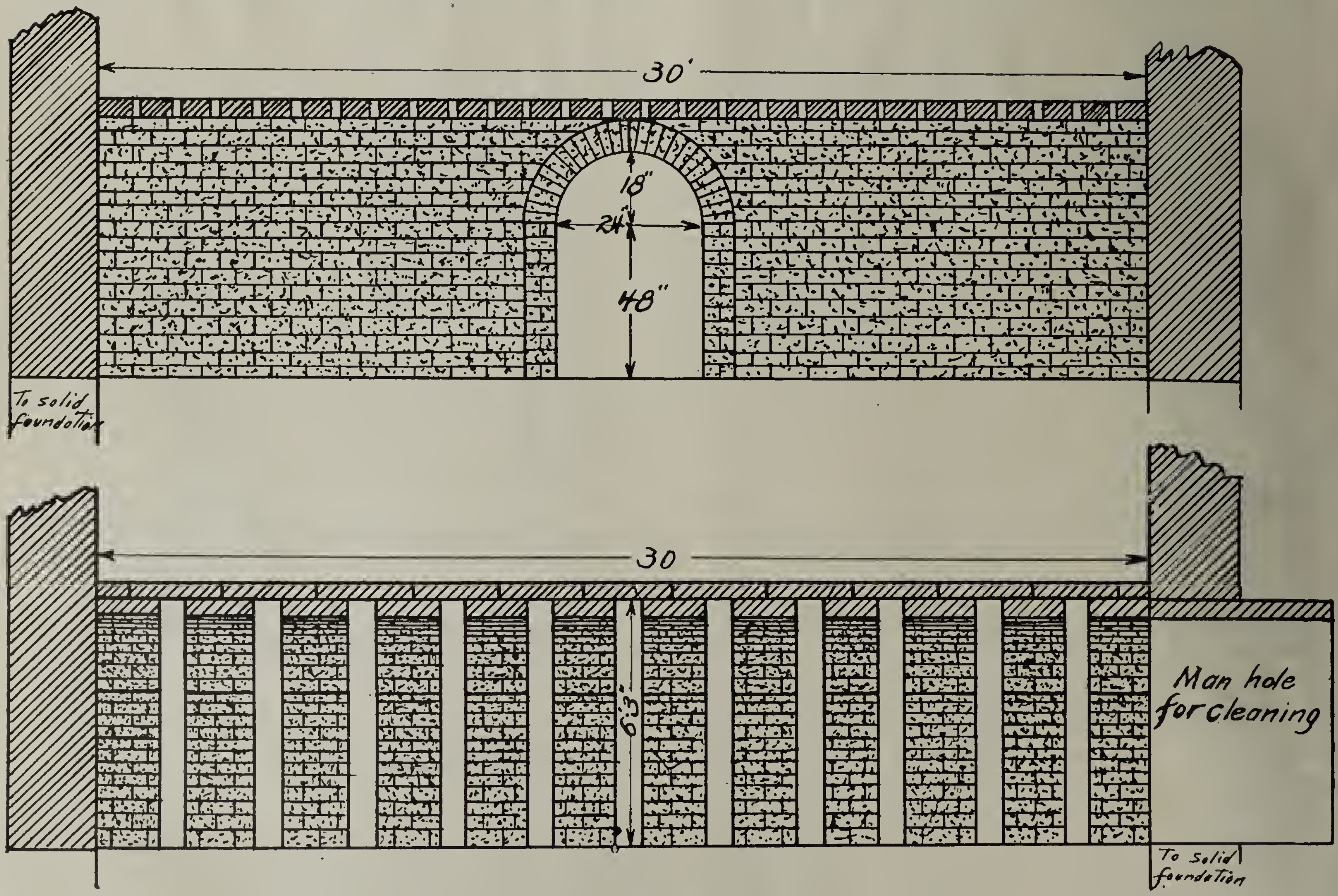


Fig. 5. Cross Section of a Riddle Bottom in Down-Draft Kiln.

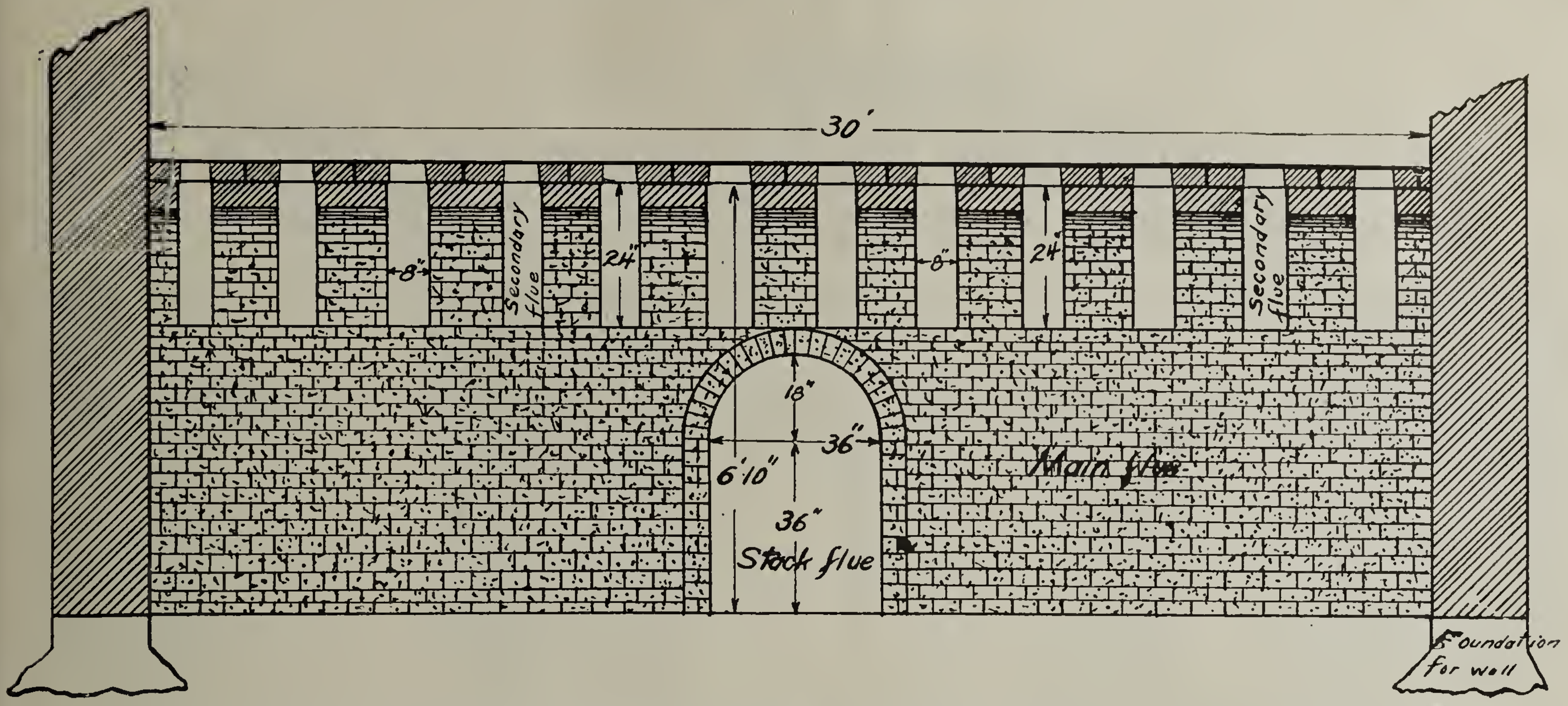


Fig. 6. Kiln Bottom Showing Stack Extending to Center of Bottom, Opening Into a Main or Center Flue.

Often one yard has as high as five or six different kinds of bottoms and are obtaining fairly uniform results from all kilns. Other companies have adopted a standard bottom, which has proven satisfactory thru use and results it has produced.

The type of bottom which produces a maximum amount of good quality ware, with the least initial expense and operating cost, is obviously the bottom desired.

Sewer pipe, wall coping, drain tile, hollow ware and products of a similar nature are burned, almost exclusively, in the riddle bottom type because an even distribution of heat is required and easily obtained. Also, such a bottom is necessary for such ware, due to its physical nature and in the case of sewer pipe the salt fumes must circulate down thru and around each piece of pipe.

Good results are obtained from the other extreme, in design, the solid bottom type. With this type the heat is pulled directly into the center flue, or it may be somewhat modified, and have several openings in the floor which lead to the center flue.

Time and fuel are used in heating up the ware between the openings and also in heating up the solid floor, thru which there is little or no circulation of hot gases, to a temperature sufficient to thoroly burn the bottom courses of ware. During the process, more or less ware is ruined adjacent to each opening, in water-smoking or in the finishing period. This type is better adapted for burning refractories than other more delicate natured clays.

Moisture Removal a Consideration in Design

The safe removal of the moisture from the ware depends upon how the temperature and draft are handled. The former is usually more easy to regulate than the draft. The riddle bottom admits the moisture to be pulled quite uniformly from all portions of the kiln as well as aids in an even distribution of the hot gases thru all portions of the setting and floor thruout the burn. Fig. 5 shows a cross section of a riddle bottom. The stack flue continues thru the kiln perpendicular to the secondary flues which open directly into it.

In Fig. 6 the stack extends to the center of the bottom, opening into a main or center flue, perpendicular to the stack flue, into which the secondary flues open. There are numerous bottoms of similar design; however, an even circulation thru all portions of the kiln and ample flue areas are indispensable factors in any design.

There must be enough resistance to the flow of hot gases, that they are not pulled out of the kiln too rapidly. The damper checks the flow but cannot even it thru the secondary flues which lead into the main or center flue; and often it becomes necessary to lay brick in these openings, leaving only a small opening into the main flue.

Flues are often made too shallow rather than too deep. The disadvantages of the shallow flues are evident, also the moisture and products of combustion get away quicker and seemingly with more ease in flues, which are deep and contain about 50 per cent. more area than those required theoretically. Deep flues are slightly more expensive to build and keep in repair than a more shallow type, altho the results obtained in burning and labor saved in operation will compensate any additional expense in construction.

The Lining and Crown Exposed to High Temperatures

Kiln crown and linings receive the most severe treatments of any portion of the kiln other than the furnaces. Flaws in design or construction stand out very prominently and sometimes extensive repairs are required after two or three burns.

A nine-inch lining built of high grade fire brick is expensive, yet if properly laid, and if not subjected to unjust abuse, should give at least 12 years of service.

For kilns in which the temperatures do not exceed 1,900 deg. F., a 4½-inch fire brick lining is sufficient, and may be built independent of the kiln wall, which allows a free movement of the kiln lining without any harm to itself or the crown; during the expanding or contracting periods.

In instances where the nine-inch lining is used, the crown is generally built on it. In Fig. 7 both crowns are shown, placed on the nine-inch lining.

Most clayworkers concede the fact, which has been proven by experience, that the best results are obtained in life and service if the vertical distance from the spring line to top (inside) of the crown be approximately one-fourth of the diameter of the kiln, and for rectangular kilns, this distance should be one-third of the width of the kiln.

The crown of kilns for salt glazed products are frequently made lower, endeavoring to keep the distance between the ware and crown at a minimum.

Two methods are extensively used for starting the crown from off the walls: the skewback which makes an abrupt start from the lining and the crown started with wedge brick, making a gentle curve from off the wall. The former method tends to

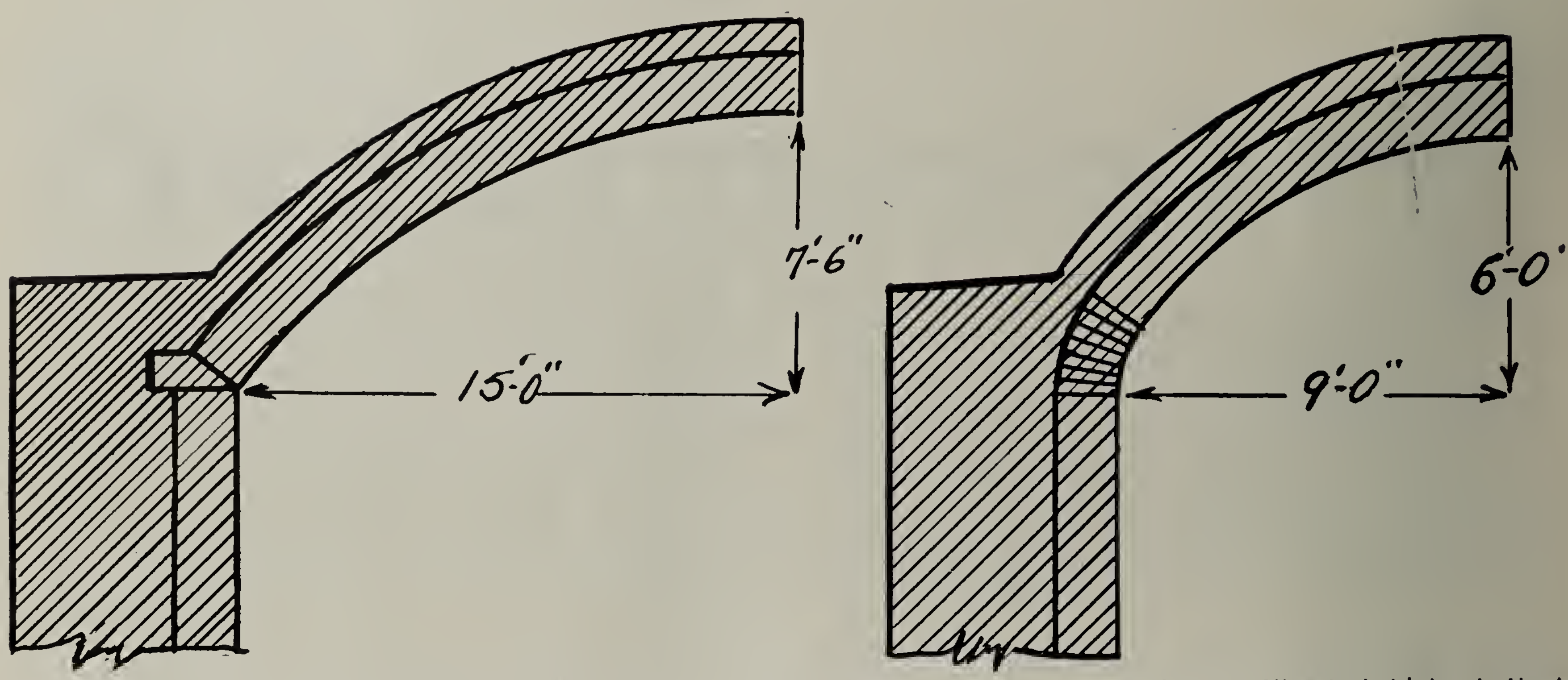


Fig. 7. Two Kiln Crown Designs Showing Both Nine Inch and 4½ Inch Fire Brick Lining. When the Nine Inch Lining is Used the Crown is Generally Built on It, Instead of Independent as When the 4½ Inch Lining is Used.

localize the whole crown thrust at the point where the skew-backs rest upon the kiln walls, while the crown started with the wedge brick divides the thrust over an area equal to the distance from the bottom to the top of the arc, which they form.

The crown on rectangular kilns, when built in sections (so that any portion can be repaired without disturbing a large portion of the crown), will need no central expansion joint unless the unit is an exceptionally long one, altho some allowance is required at each end for expansion.

Flues to the Stack

Ordinarily, the design of the flue to the stack may seem of secondary importance. However, this dimension is of importance, if not the most important in kiln design, as upon the size of this flue depends the draft and speed with which a kiln can be burned.

These flues have a tendency to push in and to fill up, to a certain extent, after a few years of use. Also, a large stack flue is beneficial during the water-smoking period.

Naturally the area of this flue is somewhat dependent upon the ratio of the grate area to the floor area. With natural draft, average run of mine coal and a grate area ratio to floor area of one to four, a stack flue area (cross section) of two square feet for every hundred square feet of floor area represents the upper limits of flue area for average conditions.

Inasmuch as time and fuel are concerned, the damper can be used to cut an excessive draft with more economy than to allow a kiln to drag along in the high fire or finish period, due to insufficient draft.

Adequate Stack Area Essential

The kiln stack is the source of escape for the hot gases and the products of combustion. The hotter the stack, the greater its suction or pull on the kiln. It is evident that a stack of just any size is not very apt to produce the draft required by the kiln.

Many ideas exist as to the most effective stack system which varies from one stack for ten or a dozen kilns to the multiple stack type.

The size of the stack should be based upon the work required of it; namely, to create sufficient suction or draft during the water-smoking period to carry off all moisture as rapidly as it is formed in the kiln and draft enough to burn the amount of fuel necessary to reach the assigned temperature in a given length of time.

Many rules are in use for calculating the proper size of a stack. The following rule gives approximately the same results as others. "The cumulative grate area in square feet should be one-fourth of the cubical area in feet of a 40-foot stack."

Multiple stack kilns require a larger ratio between the stacks and grates than the single stack type. It is considered good practice to build the stacks so that their cumulative areas (cross section) will not be more than 11 per cent. of the cumulative grate area.

Stacks which are full of cracks permit large quantities of cold air to be sucked into them, cutting the draft. This can be reduced considerably by careful pointing.

Temperatures frequently exceed 1,000 deg. F. which creates considerable expansion and facilitates cracking, especially in unlined stacks. A 4½-inch lining built separate from the outer walls gives them ample protection and also the lining moves freely inside of the stack walls. The lining should be built and held three to four inches from the outer wall.

Two or more kilns can be burned on the same stack (designed for them) without a division wall in the stack, altho the draft of one seldom fails to injure the progress of the other in some manner. Spiders or division walls should be built at least 25 feet high to prevent one draft and temperature from interfering with the other.

Dampering Necessary for Economical Operation

Seldom is the flow of hot gases from the kiln unchecked during the burn, especially during the finishing period. If the draft is unchecked, the stack losses unquestionably will be very high.

The two general methods of checking the draft are (a) by use of dampers in stack or flue, (b) by admitting cold air into the stack thru a wicket built for that purpose, the brick being taken out or replaced as the condition may require.

The latter method is very effective, but demands frequent attention from an experienced operator to secure economy and uniform good results.

A fire clay damper, with iron work protected from the direct action of the flames by grooves in the sides and bottom, and balanced with a counter weight operating over a pulley held by a solid iron frame, is easily handled by the firemen and accurate draft control may be secured.

Sheet iron dampers burn out rapidly and warp out of shape when exposed to any very severe temperatures. They give good service when placed on top of a stack, but the operating mechanism is the source of trouble. However, they are well adapted for use on the stacks of the multiple stack kiln.

Insulated Wall Economical

Before insulating material could be secured by all kiln builders four to six foot walls were a common occurrence and the only method by which radiation thru the walls could be controlled.

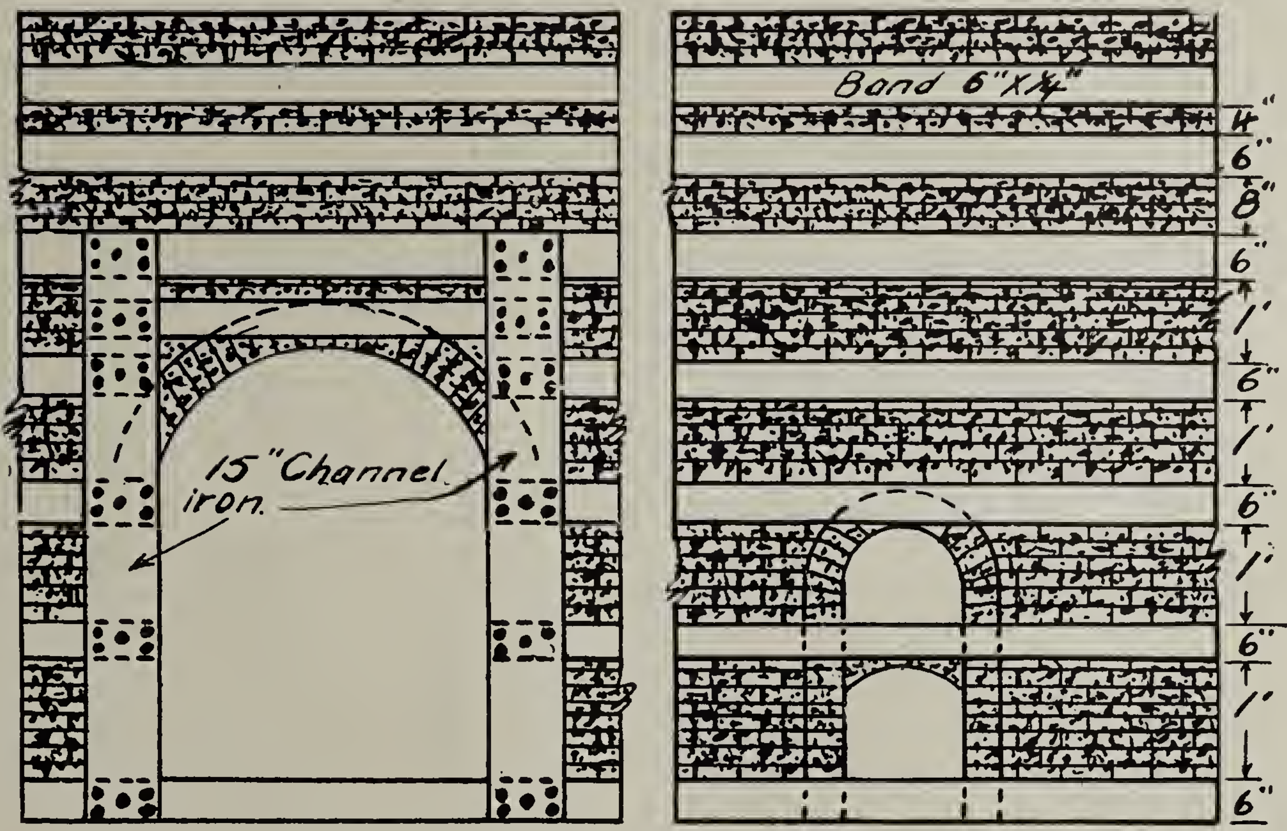


Fig. 8. Spacing of Kiln Bands and Method of Attaching Bands to Channel Iron Supports.

Insulating brick are obtainable at a comparatively low cost, considering their value for this purpose. Also insulating brick which are quite effective can be made on the yard.

A 24-inch wall with one 4½-inch course of insulating brick has sufficient strength to carry the load required and the wall radiation is quite well eliminated. Furthermore, this thickness of wall allows much more fuel to burn in the kiln proper, which does away with heavy furnace repairs and more heat is realized from the fuel consumed.

Hobs of different width are frequently built to permit a large combustion or grate area, especially for ware which must be burned without flashing.

Skill and Care Required in Construction

The rate of depreciation of a kiln depends to a great extent upon the foundation on which it is built and the manner in which the common and fire brick are laid in the walls.

An average mason has little, if any, conception of the strains that the brick undergo during a burn or of the proper tying of the walls necessary to hold the masonry together as a unit.

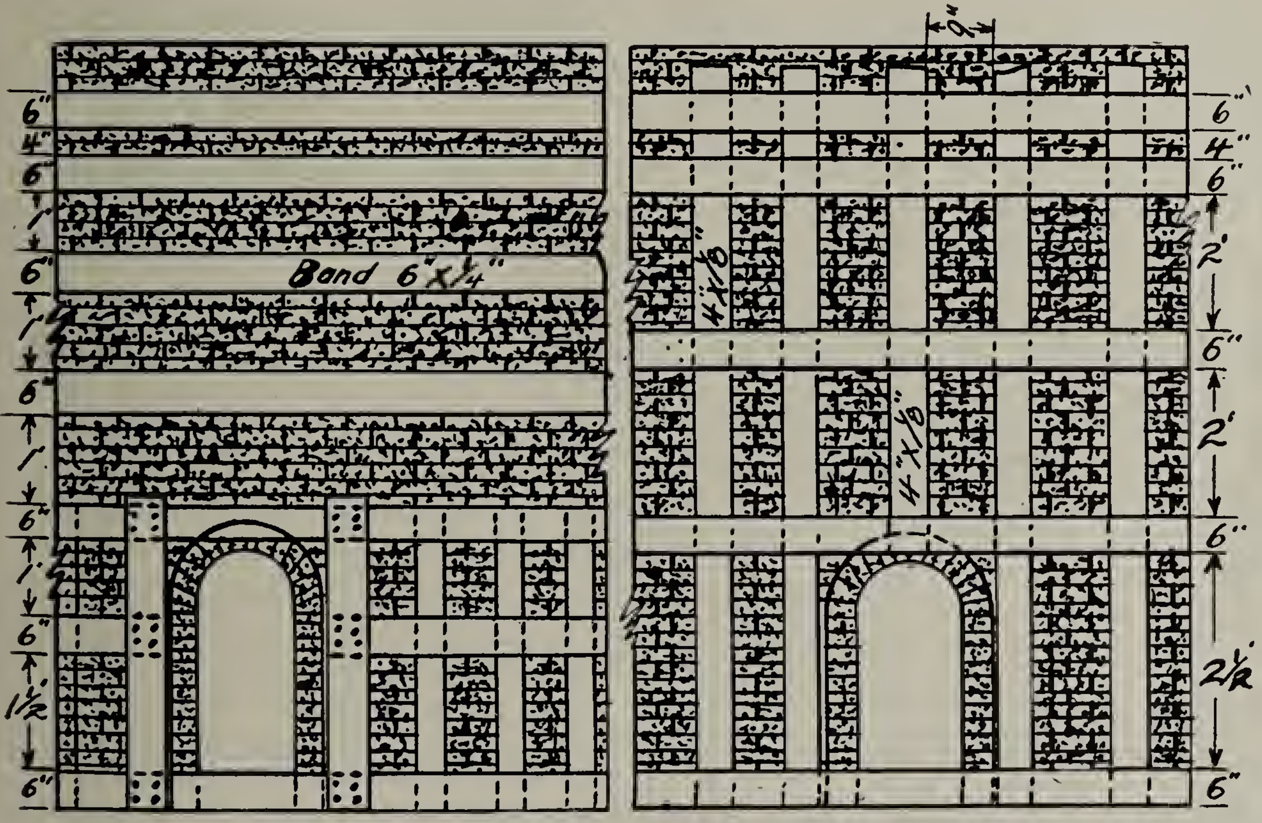


Fig. 9. Tying Kiln Bands Together with Vertical Slats Four Inches Wide and One-Eighth Inch Thick.

It seems to be a custom with many, when extensive repairs are required or an additional kiln is to be built, to secure the services of any available mason who wishes to work, and the average result is a new or partially new kiln in six or ten years. The services of an experienced kiln builder will cost but little more than the wage of a union mason.

Each brick should be malleted down till in place. This overcomes to some extent thick joints, thin joints and fillings of mortar and makes a more serviceable job. Thick mortar joints or the filling in of holes or wide cracks with mortar or small pieces of brick is poor practice.

Use Material Adapted to Kiln Conditions

Rapid deterioration in some instances may be due to the use of material which fails to stand the high temperatures reached and maintained in the kiln. The careful selection and inspection of all material is quite essential to insure that it is of suitable quality to withstand the treatment which it will receive in service.

Fire clay shapes or blocks give better service in furnace arches than the smaller units (brick). Fig. 3 shows how arch brick, wedge brick or fire clay blocks may be used in furnace construction. Also a 12-inch fire clay crown block is much more serviceable and economical than the regular nine-inch crown brick.

Mortar for joints which are exposed to high temperatures should be carefully prepared and kept free from foreign material such as lime, sand, cement or any ingredient which reduces its fusion point. Fine ground refractory brickbats are unequaled as a non-shrinkable materal to reduce the shrinkage of very plastic high shrinkage clays used in mortar. A mortar for exterior and common brick work must be capable of withstanding weather conditions as well as the temperatures encountered in the wall.

Expansion Joints Necessary

As a kiln is heated up the brick gradually expand and this expansion is irresistible in kiln structure. The crown thrust during the burn is not increased by expansion as much as it is generally supposed. Furthermore, the breaking of bands is more liable to occur from wall expansion than from crown expansion and thrust.

The only source of controlling this expansion is by means of expansion joints between the brick and as yet the only practical way is in the vertical mortar joint.

Clay mortar shrinks when subjected to high temperatures, and this allows some room for the expansion of the brick, without causing damage to the wall. Often these joints are much too large, allowing the brick to work out of place. This is first noticed in the arches.

Allowing for expansion between every brick eliminates the large joints and permits a large number of small joints to operate in all portions of the wall, which greatly reduces the chance of damage to the wall. The expansion area between the floor and the kiln wall, if kept open, saves the lower portion of the walls from much abuse. It is a very common occurrence to find walls pushed out till the inside diameter has increased from 30 to 31 feet at the floor. Consider the openings which admit cold air to the lower portions of the kiln below the zones where the pressure of the kiln atmosphere is equal to and greater than the pressure of the outside atmosphere. Also, the effect of the air on the ware, disregarding the extra fuel consumption required to overcome its cooling effect in the kiln.

The crowns, due to their design, are quite free to rise, have some area for expansion in their mortar joints and also there is, undoubtedly, diametrical expansion of the kiln, all of which tend to lessen the vertical thrust. This may in a way account for crowns standing during the latter portions of a burn after the bands at the crown seat had burst.

Some rough estimates of the shrinkage of the mortar in drying and during a burn, and the approximate expansion of a fire brick when at a maximum kiln temperature, are of value when more detailed information is not available.

Banding or Ironing of Kilns.

Different procedures have been followed in holding the brick in place in the wall and to prevent them from cracking, and as can be expected the methods vary widely, from the steel jacket or shell to the wall with a few inadequate bands.

The number of bands necessary to hold the kiln wall securely in place depends on the height of the kiln walls, temperature reached and size of kiln.

A band six inches by one-quarter of an inch in thickness is sufficiently strong to withstand any ordinary kiln strain. A band at the floor level helps to keep the walls from pushing out and should not be omitted. Also, it is good practice to put one at the grate bar level, one at the furnace crown and two at the crown seat not more than five inches apart. The space between the bands at the crown seat and furnace crown may be divided so that the distance between them does not exceed 12 or 15 inches.

Use of Kiln Banding

The use of heavy six inch coil springs, two to a band, allows for free expansion of the kiln, and care must be exercised in adjusting these during the first few burns of the kiln. Fig. 8 shows method of banding with horizontal bands, also use of channel irons around wickets.

Fig. 9 shows two methods of banding with vertical slats four inches wide by one-eighth of an inch thick, under the horizontal bands. This method is quite extensively used and all brick work is securely held in position. These bands also require some loosening during the burn and retightening while the kiln is cooling.

The use of 15-inch channel irons on each side of the wicket (Fig. 8), firmly held together at the top and bottom, overcomes one source of weakness in the banding from the average yard. Failure to properly fasten the wicket rods or stays allows the bands to give around this portion of the kiln with the expansion. Also the use of these channel irons eliminates the expense of putting the rods in before each burn and taking them out after each burn is completed.

The life of the bands can be somewhat lengthened by applying a coat of suitable iron paint every season and before they are assembled on the kiln walls.

In ironing the rectangular types the I beams are gradually replacing the braced channel stays or buck stays, due to their simplicity, strength and cost. The source of most trouble due to ironing is in the rods, which hold the I beams or stays from spreading. They are given little attention and require considerable, if the rods are kept tight from burn to burn the crown will be held in its proper position.

Kiln Inspection and Repairs

To insure that every kiln is held out of active service the least possible time for necessary repairs, and that the repairs are made at a time when their cost will be at a minimum and the work done without curtailment of the output, a thoro kiln inspection is required as soon as a kiln has been emptied.

Such an inspection would cover the furnaces, lining, crown, bag walls, floor, bottom, flues, stack and exterior portions of the kiln.

The condition of any deteriorated portion such as lining, crown, bag walls, furnaces or flues which require immediate attention is well known and may be repaired before any serious amount of damage results from neglect of attention. Furthermore, repairs may be somewhat planned in order to prevent interference with the setting crews.

The mason, who is intrusted with the kiln repairs, occupies a position from which depreciation, yearly repair costs and kiln service, as far as repairs are concerned, may be effectively governed.

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SHOW WRONG USE OF REFRACTORIES

"Are Refractories Imposing a Limitation on Stoker Performance?" is the title of a booklet published by Laclede-Christy Clay Products Co., of St. Louis, and written by C. W. Berry and Lloyd R. Stowe, of that company. This booklet gives some of the many causes and reasons for the failure of refractories and the many abuses to which they are subjected. Discussions of abuses of refractories due to operating conditions, to furnace design, and to improper selection of brick are extremely interesting. A number of pictures also show very clearly the effect of improper and wrong use of refractories, and the failures in refractories due to unreasonable conditions imposed upon them.

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RESEARCH GRADUATE ASSISTANTSHIPS

Announcement has been made by the College of Engineering and Engineering Experiment Station at the University of Illinois at Urbana, that applications for appointment to the Research Graduate Assistantships which are maintained by the Engineering Experiment Station of the University of Illinois will be received. If the full quota of Research Graduate Assistantships is secured, there will be ten vacancies to fill, and in addition one Research Graduate Assistantship in gas engineering. Applications for appointment to these positions should be sent to C. R. Richards, Dean and Director of the College of Engineering at the University of Illinois, before March 1, 1922.

These Assistantships carry with them an annual stipend of

$600 and freedom from all fees except the matriculation and diploma fees, and are open to graduates of approved American and foreign universities and technical schools who are prepared to undertake graduate study in engineering, physics and applied chemistry.

* * *

CORRECTING A MISLEADING STATEMENT

Our attention has been called to the fact that in the story on the Bradford Brick & Tile Co. plant which appeared in the December 27 issue of Brick and Clay Record, the paragraph on page 995 under the heading, "Elevators Given Special Consideration," might be misleading. The dry pans used by the Bradford plant, as explained in the article, have approximately twice the capacity of the usual dry pan. Hence, instead of only one electric vibrating screen being required, as is usual, two six foot screens are used for each pan. This is due only because the dry pans deliver approximately twice the tonnage of clay that the usual dry pan delivers.

From the article one would gain the impression that four screens were required for each pan, whereas, four screens are required for the two pans which are now in operation, or two screens for each pan.

EXPERIMENTING ON HEAVY CLAY PRODUCTS

Physical and chemical studies in cooperation with the heavy clay products associations are progressing at the Ceramic Experiment Station at Columbus, Ohio. The oxidation of the accidental minerals found in clays is being carried out separately, and the catalytic effect of clay upon these reactions is being studied together with the influence of time and temperature. Apparatus and material for experiments on the chemical heat developed during firing is being assembled and set up. All this work is in the development stage, and new methods and apparatus will have to be developed as the work progresses. The safe rate of firing the products burned in the industrial kilns now being tested was carried out in the laboratory and the results applied to the commercial burn.

* * *

FOREIGN TRADE COUNCIL TO MEET

Announcement has been made that the next convention of the National Foreign Trade Council will be held at Philadelphia, May 10, 11 and 12. In the announcement O. K. Davis, secretary of the Council, states that exports for the last six months have been 63 per cent. greater in value than in 1913, and about 15 per cent. greater in volume.

* * *

Refractories Accountants Hear Interesting Papers

THE Refractories Accountants' Institute, composed of men concerned in the accounting of firms who are members of the Refractories Manufacturers' Association, met at the Hotel Deshler in Columbus, Ohio, December 20. This was only a one day meeting, but by beginning early and continuing thru luncheon and dinner, quite a formidable program was disposed of.

There was an address by the chairman, W. J. Westphalen, of Laclede-Christy Clay Products Co., St. Louis, on "Cost Accounting of the Future," showing the inadequacy of post-mortem accounting methods.

E. F. Myers, of the Ironton (Ohio) Fire Brick Co., reviewed the late H. L. Gantt's "Organizing for Work," showing up the futility of assessing the cost of idleness against the product of part of a month while no idle time cost is borne by the product of a full month.

A. Henderson Addresses Meeting

A. Henderson, of Evans & Howard Fire Brick Co., St. Louis, who has recently returned from a tour of the British Isles, discussed the first chapter of G. Charter Harrison's "Cost Accounting to Aid Production," the first of a series showing that the accountant is an indispensable factor in reducing costs. Discussion of his paper was led by C. J. Steitz, of the National Fire Brick Co., Cleveland.

The second report of the committee on the standard classification of labor cost was presented by the chairman, R. E. Byrne, of Ashland (Ky.) Fire Brick Co. This, together with the first report, was discussed by F. S. Dunlap, of Standard Refractories Co., Claysburg, Pa. A spirited discussion ensued over the best method of accounting for the cost of breakage, measuring the loss and fixing the responsibility.

Questionnaire on Overhead Expenses

F. W. Neuroth, of the Joseph Soisson Fire Brick Co., Connellsville, Pa., gave the first report of the committee on raw material costs and the ensuing discussion was led by H. L. Ahrbecker, of Chicago Retort & Fire Brick Co., Chicago. Interest was keen regarding the disposition of initial development expenses and the rate at which they should be absorbed in costs.

E. F. Henry, of Queen's Run Fire Brick Co., Lock Haven, Pa., is preparing a questionnaire regarding the proper handling of overhead expenses, in view of the objections to assessing full time overhead against a limited output or of the embarrassment resulting when on account of being closed down there is no output to carry the ever-present overhead.

On the question of including interest in costs, there was an adequate presentation of both sides by E. F. DuBrul, of Pyro Clay Products Co., Cincinnati, who favored the inclusion of interest and by J. S. A. Smith, of Harbison-Walker Refractories Co., Pittsburgh, who spoke for those opposed to its inclusion. On account of the importance of the subject there is no disposition to come to any hasty conclusion regarding it.

J. M. Dilworth, of Eureka Fire Brick Works, Mt. Braddock, Pa., discussed the first report of the committee on obsolescense, which report appeared in Brick and Clay Record of November 29.

Advise Members to Read Brick and Clay Record

In discussing "What Should Members Read?" it was decided that all should at least read regularly Brick and Clay Record for articles on accounting as applied particularly to the refractories industry, and Management Engineering published by the Ronald Press Co. for the purpose of correlating accounting with industrial engineering of which it is by many regarded a part.

F. A. Strassler, of the Frank B. Pope Co., Pittsburgh, reviewed the past programs of the Institute showing their development of the theme that accounting is a dynamic force in eliminating waste and reducing manufacturing costs in the refractories industry.

J. Lee Boothe, of Detroit, representing the Detroit Chapter of the National Association of Cost Accountants, was present at all sessions and in addition to giving a discussion of the new income tax law and replying to questions concerning correct tax procedure, he took an active part in all the other discussions.

The next meeting of the Institute is scheduled for Chicago on March 17.

VETO FIRE BRICK RATE REDUCTION

The Board of Trade Journal of Louisville, Ky., in its annual issue, containing reports of various board committees, has an interesting traffic committee report, which among other matters reported:

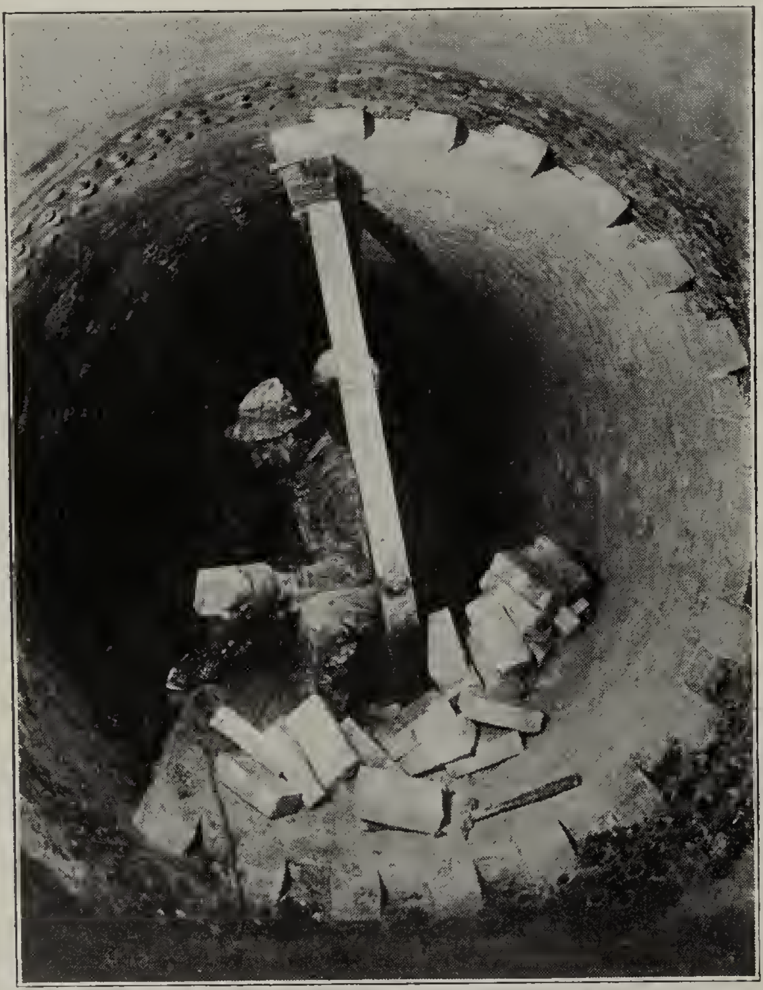
"Recently carriers filed application with the Central Freight Association seeking approval in reducing the present rate of 12½ cents per 100 pounds on fire brick, carload, from Cannelton, Ind., to Louisville, Ky., on shipments destined to points beyond in the State of Kentucky, to eight cents per 100 pounds. The traffic department placed the matter before interested members and received advices that the establishment of the suggested rate would adversely affect our interests, in view of which vigorous protest was lodged with the Central Freight Association and carriers alike. Our activities resulted in carriers withdrawing application and no change being made in the existing rate."

* * *

BEG YOUR PARDON

In the November 29 issue of Brick and Clay Record there was published an article entitled, "Refractory Linings for Cement Kilns," which was reprinted by permission from another journal. A natural error due to reprinting was made in this article which it is desired to correct herewith.

The accompanying cut was said to picture the method of installing a refractory lining in a rotary cement kiln. This photograph, however, shows the installation of insulation brick, which are placed between the refractory lining and the outer steel shell.



Method of Installing Insulating Brick in Cement Kiln.

* * *

FIGURES SHOW 1921 GOOD BUILDING YEAR

The total amount of construction contracts let during 1921 was $2,359,018,000, which is only eight per cent. under the 1920 total, says the F. W. Dodge Co. review for December and the year 1921. It is doubtful whether any other business fared so well in 1921 as the construction industry as a whole has, even tho the volume of construction has been unevenly distributed as to classes of projects and as to locality.

Residential building which amounted to $880,520,000 takes first place with 37 per cent. of the 1921 total, representing an increase of 54 per cent. over 1920 residential construction. Public works and utilities amounted to $459,184,000; business building, $336,920,000; educational buildings, $242,562,000; industrial buildings, $173,325,000.

December building contracts in the 27 northeastern states covered by the F. W. Dodge Co. amounted to $198,518,000 which is greater than for any previous December, with the exception of December, 1919.

It is reasonable to expect increased activity in every class of construction projects in 1922 with residential construction most probably predominating. The fact that December did not show its customary decline compared with the previous month is a good augury for the coming year. It is not unlikely that when reports for building in 1922 are compiled at the close of the year, a total of contracts let amounting to four billions of dollars will be shown.

* * *

DESIGN NEW CONCRETE BLOCK

According to "Better Iowa," a bulletin issued by the Iowa State College at Ames, a new type of concrete block, "L" shaped, has been designed by the agricultural engineers of Iowa State College. The new block, which resembles only a half block of old and common design, is much smaller, more compact and tests show it to be as serviceable as the one in present use. In compression tests made to try out the stability of the new type block, it withstood all the tests applied to larger and common brick and both withstood the pressure of 2,100 pounds per square inch.

Tests have shown that these blocks can be made more easily than the others, utilizing unskilled labor. Buildings made in Ames with the new block have been very satisfactory, it is reported.

* * *

GEORGIA CLAY PRODUCTS' VALUE GAINS

Statistics just announced by the Georgia State Geological Survey covering the total value of the mineral products of the state during 1920 and 1921, as compared with former years, show a tremendous increase the past few years, with brick and tile and clay products almost tripling the total value of any other mineral product produced in the state.

Since 1915, when the value of mineral products showed a decrease of 10.6 per cent. the value of the mineral production of Georgia has increased at varying ratios until 1920, when it was 42 per cent. greater than the previous year. In 1921 this figure will be either equalled or excelled the state board reports, tho definite figures for the present year will not be available for several months. The total value of mineral products produced last year in the state reached $13,396,823, of this amount brick and tile representing $5,425,000, and clay products representing $1,070,738.

All structural minerals, mainly brick and tile and clay products, showed a marked increase in 1920 over pre-war times because of increased building activity, and are also expected to show another increase when 1921 figures are available. In fact the figures now available for this year indicate that the brick and clay products industry has been one of the few in the state that has been able to hold its own during the period of business depression.

* * *

PERMEABILITY OF REFRACTORIES

Investigation of the permeability of refractories is being conducted at the U. S. Bureau of Mines Experiment Station, Columbus, Ohio. Samples of fire brick, developed for low spalling, will be incorporated in this investigation.

The Building Situation

THE TURN of the year shows a tendency to withhold the actual award of building contracts in the New England district, with consequent reduction in totals of about $1,000,000 a week, compared with a month or so ago, and about $2,000,000 over the corresponding period of a year ago. Contracts awarded in this section are now reaching on an average of a little over $2,000,000 weekly.

Common brick at Boston, under fair demand, holds at figures varying from $18 to $21 a thousand, delivered. Water-struck, kiln run brick is being retailed at $30, while selected material is selling for $32, on the job. Face brick is averaging around the $50 level for good selections.

Hollow building tile has established lower levels in the local market since the first of the year, with 4x12x12 inch material in carload quantities selling at $96 a thousand; 8x12x12 inch, $182; and 12x12x12 inch, $248. Partition tile, four inch, is priced at $140 a thousand, retail, and eight inch, at $260.

Standard sewer pipe is 50 per cent. off list, and double strength material, 35 per cent. off. Flue lining is 50 per cent. off, and wall coping 45 per cent.

In the Providence Market

Prices of building materials are being well maintained at Providence. Common brick is being sold at $20 to $24, delivered. Sewer pipe, single strength, is 40 per cent. off list.

Clay partition tile, 4x12x12 inch, holds at $160 a thousand, and eight inch tile at $270. Drain tile, three inch, is priced by local dealers at 12 cents a foot, while four inch material is 16 cents, delivered. Flue lining, 8½x8½ inches, is 36 cents per foot; 8½x13 inches, 54 cents; and 13x18 inches, $1.05 a foot. Wall coping varies from 32 to 96 cents a foot, according to size.

Record Construction at New York

A tabulation of activities in New York during 1920 gives record-breaking totals. The contracts awarded during the year aggregate $394,754,400, or more than 25 per cent. greater than the figures for the preceding year, which stood at $315,048,200, and 41 per cent. higher than in 1919, with a total of $279,478,200. Residential operations in 1921 represent close to two-thirds of the aggregate, or $262,184,400. No less than 56,356,700 square feet of floor space of this nature was contracted for in the Greater City during the period, as compared with 15,142,000 in 1920. The erection of commercial buildings takes second place in the totals, representing 18 per cent., or $70,062,200 of the aggregate.

Common brick in the New York market is becoming well stabilized at $14 and $14.50 per thousand, wholesale, alongside dock. Both the wholesale and retail markets are well stocked, and dealers are turning the material at $17, delivered. There are no quotations on Raritan brick in the city, and second-hand material is still bringing $45 per load of 3,000, delivered on the job.

Hudson River Closed

The Hudson River is closed solid north of Tarrytown and all brick shipments are over for a number of weeks. The Haverstraw section has been sending a few barge loads in since the first of the year, but these have been very slight, running but four or five loads, compared with regular arrivals of from 30 to 40 barge loads during the active season.

Face brick shows no change in levels, ranging from $45 to $55 a thousand, and other burned clay products are holding well at established figures. Interior partition tile, split furring, is selling from 12 cents a foot for two and three inch sizes, to 17 and 19 cents for four and six inch material.

Much Residential Work in New Jersey

Residential operations in New Jersey attained new high totals in 1921, and the indications are that even these figures will be exceeded during the present year. At Newark, practically one-half of the building for the year, aggregating $20,642,990, is represented by housing work, and close to this same average prevails in other important cities of the state. One-family and two-family houses are the more popular, and totaled over $5,600,000 in 1921. Garage construction attained a new record, with about $2,000,000 of the total devoted to operations of this kind. Factory construction failed to reach a million dollars, standing at $970,100 for the year, or a decline of about $4,000,000 as compared with figures of recent years. The year 1921 was Newark's biggest building year, exceeding the previous high average of 1920 by $78,270.

Operations at Trenton reached a total of $3,306,000 during the past year, a decided decline as compared with the previous year which brought a volume of work totaling over $6,000,000. Brick dwellings were the prominent feature of 1921 operations in this city.

Dealers at Newark are asking $19 and $20 for the material, delivered, while at Paterson and vicinity, practically like figures prevail. Prices at the Hackensack kilns are from $16 to $17, with reserve stocks sufficient for all demand. At Trenton, common brick is being retailed at $17.50 and $18, with kiln prices at the local yards about $2.25 under these figures. Partition tile varies from $125 to $200 a thousand, according to size.

Philadelphia Building Totals Large

Building construction recorded a total of $43,790,780 at Philadelphia during 1921, with the highest number of permits ever registered, standing at 12,676. Dwelling operations led all other classes of construction in the city, totaling 2,259 houses and tenements with a valuation of $12,959,110; this is an increase of 964 dwellings over the previous year. Garage construction was another big feature of local work, and aggregated $3,505,695 for 1,569 structures of this nature. Factory work declined to $2,697,690 for new buildings, altho the figure of $14,278,500, recorded for additions and improvements to existing structures during the year comprises much industrial work.

It is confidently expected that new high records will be produced in 1922, particularly in the line of two-story brick dwellings, which are taking the lead over all other construction. Municipal operations, also, will represent many millions in new work.

Common brick at Philadelphia is $16 in cargo lots, in smaller quantities $17 delivered. Hollow tile has declined in the past few weeks, with the following prices now quoted in carload lot shipments: 4x12x12 inch, $130 a thousand; 6x12x12 inch, $180; 8x12x12 inch, $230; 10x12x12 inch, $305; and 12x12x12 inch, $385.

1921 Sets Baltimore Building Record

Construction operations at Baltimore during 1921 established new high records, exceeding the previous year by a total of $175,416. The total for the period was $36,318,038, with housing work comprising a large proportion of the aggregate. Two-story brick dwellings take the lead as the prominent feature of work, and since the first of the year, active continuance has been maintained in this direction.

(*Continued on page 145*)

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

HOW INDIAN POTTERY IS MADE

NO DOUBT the reader has seen in archæological museums the characteristic Indian pottery. It is beautifully decorated with figures of wonderful symbolism. This pottery was made by a people which inhabited our country many years before Columbus landed at San Salvador, and today the School of American Archæology is digging in mother earth to find, if possible, the secrets of those ancient peoples.

A few years ago this school was working in and around Santa Fe, New Mexico, a field rich in antiquities. That those interested might understand more of the ancient pottery, Dr. Edgar L. Hewitt, director of the school, induced some Pueblo Indians from San Ildefonso, New Mexico, to come to Santa Fe and make pottery for the benefit of the students.

How Indians Make Pottery

These Pueblo Indians are supposed to be descendants of those whose pottery is found in the various excavations in that region, tho their traditions are not conclusive on that point.

They brought with them two kinds of dry powdered clay —red and white, which they mixed in bowls, adding water until it is of the right consistency to mold. Then a small lump is rolled in the hands and molded into the proper shape for the bottom of the bowl, another small lump is then kneaded and rolled into a long slender cylinder, and placed around the edge of the first, and patted and molded into shape. This process is repeated again and again, until the bowl is of the desired size. Then with the true artist's touch, it is patiently and lovingly, as it seems to the spectator, patted and smoothed into a thing of beauty.

Burning Very Primitive Method

After this the bowl is put aside to dry in the air for a day, when it is ready for decorating. This is done skillfully in various conventional designs rich in symbolism. After the painting is done, the bowl is allowed to dry again, for a

A Pueblo Indian Woman Making Pottery in the Same Way as Her Ancestors Did Years Ago.

A "Kiln" Ready for Firing. The Ware is Simply Covered with Slabs of Earth.

Burned Ware Ready for the Decorating Process.

How the Ware is Taken Out of the Fire.

day, then a number of them ready for firing are placed in a heap, with a space under the center for the fire, consisting of kindling and fuel carefully laid.

Then all are covered over with great blocks of earth, and the fire is applied and allowed to burn for from twelve to twenty-four hours, depending on the color desired. Sometimes undecorated bowls are covered in an almost air-tight enclosure and the fire allowed to smoulder for thirty-six to forty-eight hours, with the result that the pottery comes out a beautiful, shiny, jet black.

When the firing is completed, the blocks of earth are lifted off and the hot bowls are taken out; the Indians handling them by means of long poles. As soon as they are cool enough to be taken in the hands, the ashes are rubbed off, and the bowls are completed by a vigorous polishing.

Much of the pottery taken from the ruins of the ancient Pueblos has a beautiful glaze, the secret of which has been lost, the modern Pueblo Indian frankly admitting that this glazing is a lost art so far as he is concerned.

* * *

30 FIRMS TO EXHIBIT IN CHICAGO

30 or more lines of American dinnerware, stoneware and yellowware will be exhibited in the Hotel Morrison, Chicago, Ill., February 6-18, for the purpose of securing a wider distribution of American pottery products. This will be the first time such an exposition has ever been undertaken in the Chicago territory. The pottery exhibitors will be the following firms:

D. E. McNicol Pottery Co., East Liverpool; Potters Co-Operative Co., East Liverpool; E. H. Sebring China Co., Sebring, Ohio; Zane Pottery Co., Zanesville, Ohio; Mutual China Corporation, Indianapolis, Ind.; Paden City (W. Va.) Pottery Co.; H. A. Wyllie China Co., Huntington, W. Va.; Saxon China Co., Sebring; Allbright China Co., Carrollton, Ohio; Sherwood Bros. Pottery Co., New Brighton, Pa.; Ohio Pottery Co., Zanesville; West End Pottery Co., East Liverpool; Crooksville (Ohio) China Co.; Brush McCoy Pottery Co., Zanesville; American Clay Products Co., Zanesville; Carrollton (Ohio) Pottery Co.; Gurnseyware Co., Cambridge, Ohio; James E. Flannagan Pottery Co., Cambridge, Ohio; Hall China Co., East Liverpool; National China Co., Salineville, Ohio; Steubenville (Ohio) Pottery Co.; Sebring (Ohio) Pottery Co.; Cannonsburg (Pa.) Pottery Co.; Wellsville (Ohio) China Co.; J. H. Stauffer Co., Chicago, Ill.; Hopewell (Va.) China Co.; Taylor, Smith & Taylor Pottery Co., Chester, W. Va.; Homer Laughlin China Co., Newell, W. Va.; Knowles, Taylor & Knowles Co., East Liverpool; Edwin M. Knowles China Co., Newell, W. Va.; Pope-Gosser China Co., Coshocton, Ohio; Brown & Reddrop Co., Cleveland, Ohio.

* * *

F. K. PENCE TO MANAGE KNOWLES, TAYLOR & KNOWLES RESEARCH DEPARTMENT

Forrest K. Pence, president of the American Ceramic Society, and for the last eight years in charge of the ceramic department of the American Encaustic Tile Co., Zanesville, Ohio, became the head of the ceramic department of the Knowles, Taylor & Knowles Pottery Co., East Liverpool, Ohio, on January 2, 1922, as previously announced.

"We cannot make our merchandise too good, and therefore we sought one of the most noted ceramists in the United States," declared John B. McDonald, secretary of the Knowles, Taylor & Knowles Co., in telling of the establishing of their new ceramic research department.

This new department will be located in the former office building of this firm, directly across Walnut Street from the present new office building and sample rooms. The most modern laboratory equipment possible to purchase has been specified. It was in this old office building, years ago, that the late President William McKinley spent many a happy hour chatting with his life-long friend, the late Col. John N. Taylor, then the managing head of the Knowles, Taylor & Knowles Co.

Mr. Pence graduated from the scientific course at Ohio Northern University in 1902, and from a special chemical course with degree of B. A., Ohio State University in 1907. He completed his course in ceramic engineering at Ohio State with degree of Ceramic Engineer in 1908 and went with the American Encaustic Tile Co., July 1, 1909, remaining with that concern ever since. Altho he was associated with the Zanesville company during the university year of 1912-1913, he taught the Senior Ceramic Class at Ohio State during that university year and bore the full title of professor. His duties with the American Encaustic Tile Co. embraced all phases of the ceramic operations of tile manufacture.

FORREST K. PENCE.

As soon as possible after Mr. Pence has his laboratory arranged at the Knowles, Taylor & Knowles plant, student classes will be formed. At the beginning, department heads will be interested, then it is possible that other classes, composed of those young men within the plant organization, and showing talent, will be tutored. The production of the highest possible type of semi-porcelain, also the development of competent department heads and the betterment of plant organization is the aim of the Knowles, Taylor & Knowles Pottery Co. In this intent, Mr. Pence will play no small part.

* * *

MADDOCK HOLDS ANNUAL BANQUET

The Twelfth Annual Dinner of the Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary ware, was held at the new Stacy-Trent Hotel in that city on Friday, January 6. It was given by the officers of the company, with superintendents, and members of the sales and clerical forces invited guests. The committee in charge of arrangements was headed by C. S. Maddock, Jr., chairman, and included William H. Kelly, Marjorie J. McCoy, Mervin A. Frisbie and W. Leon Bebbington. Following an enjoyable dinner, a feature of the entertainment of the evening was provided by a mock trial, the defendent in the person of James Parker being held for "bootlegging," with judge, prosecutor and counsel for the defense taking their respective parts in an able manner. Among those present at the banquet were: C. S. Maddock, Sr. and Jr., H. S. Maddock, A. M. Maddock, W. W. Anderson, J. F. Lenox, J. F. Kelly, F. D. Holmes and Edward Manser. Covers were provided for about 70 guests.

* * *

F. P. JUDGE, PRESIDENT UNITED STATES POTTERS' ASSOCIATION

A year ago every one associated with the American pottery industry, at least those in close touch with the affairs of the United States Potters' Association, knew that Frank P. Judge, Jr., secretary and sales manager of the National China Co., Salineville, Ohio, would be the president of the association for the fiscal term of 1921-1922. And he is. Not only that, but Mr. Judge is the youngest within the trade to ever occupy that position.

Since the National China Co. has been a member of the United States Potters' Association, Mr. Judge has always been selected a member of important committees. At the annual meeting of the association held in the Hotel Astor, New York, December, 1920, the nominating committee realized the activity of this young man, and he was elected as second vice-president. This insured him the presidency at the recent Washington meeting, as the rules of the association are, that the president, retiring, steps down to first vice-president, this an honorary office. The promotion to the presidency is a step from the second vice-presidency.

FRANK P. JUDGE.

Old manufacturers, who have been identified with the United States Potters' Association since its formation 47 years ago, say that "Frank will make good." He has done this in all his committee work, and his aim is to continue this record as president of the association.

* * *

DESIGNS UNIQUE WARE

William J. Barker, head of the mold department of the Cartwright Bros. Pottery Co., East Liverpool, Ohio, has designed a footed individual creamer, sugar and teapot, the first of the character to be designed in the East Liverpool district. Instead of making the item in two pieces, the foot is cast with the bowl, but the handles, which are of a "Chippendale" design, are "stuck on." Such items have been had in the silver line heretofore, but never in American semi-porcelain body.

* * *

INCORPORATE CROCKERY COMPANY

The Comptoir Trading Corporation, Newark, N. J., has been organized under state laws, with a capital of $15,000, to manufacture crockery and other clay products, it is reported. The incorporators are Leon Monnier, Frederick C. Hunter and Augustine Dorvalle. The company is represented by William H. Leffingwell, 92 Shephard Avenue, Newark.

* * *

MAY BEGIN WORK IN FOUR MONTHS

It will probably be four months before the Scio, Ohio, plant of the Albright China Co., of Carrollton, Ohio, is working to capacity. The company is now operating four kilns, and in the meantime construction of the new plant continues. This shop in time will have a capacity of nine kilns. Both glost and bisque kilns are now being drawn. The body used at the Scio plant is identical with that used at the No. 1 or Carrollton plant.

* * *

EASTERN OHIO PLANTS BUSY

It is generally predicted that pottery plants in the eastern Ohio district will operate on a much more active scale during the first six months of this year than for the same period last year. In the Sebring district, it is reported that the five pottery plants are working almost full time, and in other districts the report is that those not now working will resume within a few weeks.

* * *

The Lansdale (Pa.) Porcelain Enamel Works has been organized with a capital of $30,000, to manufacture porcelain products. Abraham H. Landis, Lansdale, is treasurer of the company.

* * *

W. J. MACKEY CHANGES POSITION

William J. Mackey, for the last three years sales manager for the Southern Potteries Co., of Erwin, Tenn., has severed his connection with that concern to take a similar position with the Hopewell China Co., of Hopewell, Va.

* * *

VITRIFIED POTTERY MEN ELECT OFFICERS

At a recent meeting of the American Vitrified Pottery Manufacturers, which was held at Washington, D. C., the following officers were elected for the fiscal year: President, C. E. Jackson, of the Warwick China Co., Wheeling, W. Va.; vice-president, D. William Scammell, Maddock Pottery Co., Trenton, N. J.; secretary-treasurer, Arthur E. Mayer, Mayer China Co., Beaver Falls, Pa.

* * *

DESIGNING NEW TEAPOT SHAPES

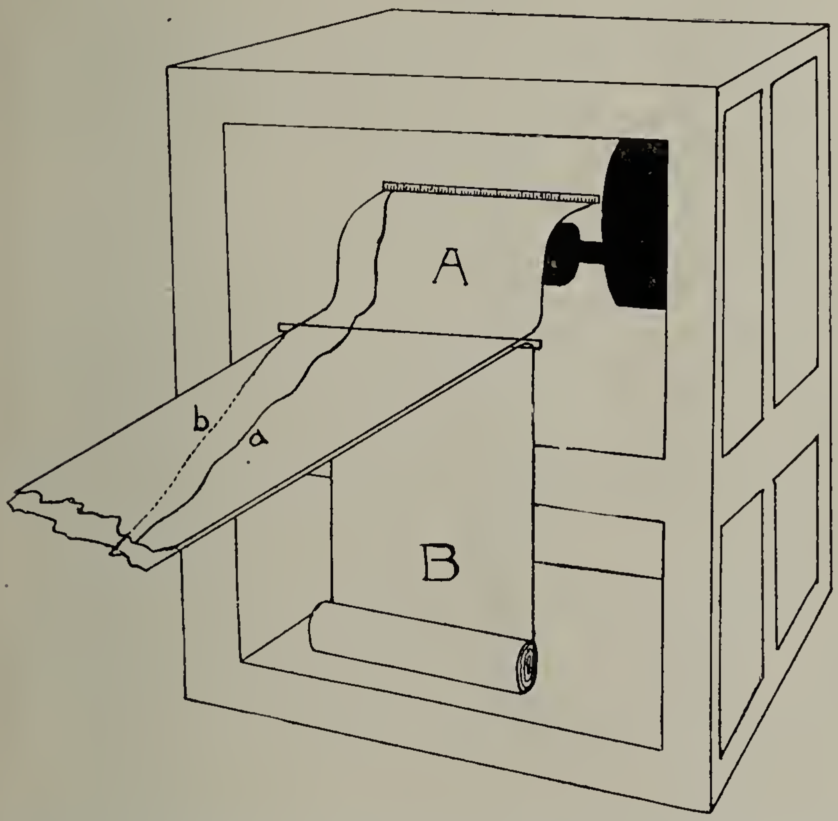
The Genesee Pottery Co., of Chittenango, N. Y., has announced that it will bring out two new shapes in teapots early in the new year, and these may be ready to display at the Pittsburgh Pottery Exposition. This concern is now under the management of Allen W. Surles, formerly with the D. E. McNicol Pottery Co., of East Liverpool, Ohio, and is manufacturing a line of brown, rockingham and jet ware.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

STANDARD TIME—TEMPERATURE CURVE

The attached cut shows a suggested use for recording pyrometers using a roll of paper for the record. A in the illustration shows the roll of recording paper, preferably transparent. Instead of the roll dropping to the lower part of the case as is usually done, it is led thru a narrow slot in the glass case and placed on top of another roll marked B in the illustration. This roll B has a curve "b" plainly marked on it which contitutes the standard rate of speed of burn, or as it is properly termed the time-temperature graph. On a plant where different types or sizes of kilns are in use a roll B should be used for every type that has or ought to have a different time-temperature graph. The roll B ought to be made of good manila paper. The curve "a" on roll A shows an actual record of the time-temperature graph of a kiln on fire, and particular attention is called to the additional time that is required to complete the burn, as shown when it is superimposed on curve "b."



Recording Pyrometer Equipped to Enable an Operator to Use Standard Time-Temperature Graphs in Connection with Actual Operation Records.

Many plants take a record of their kiln temperatures every twelve hours and plot them on some cross section paper. With the system suggested here it is unnecessary to make a separate chart of the heat curve.

By attaching some method of moving the end of chart B back and forth it can be used at any time and also can be used for any number of kilns that may be shown on chart A. The start of the standard graph on B is always made even with the start of the heat record on A.

A GAGE FOR MEASURING DENSITY

In the January issue of the American Clay Magazine is an interesting item concerning a density gage. It states:

"It is recognized by all clay workers that the tempering of clay is the big vital point of importance in the production of good clay products.

"Some clays require more density than others and it is necessary to ascertain the best working density and then by maintaining the temper of the clay at the determined point the production of highest grade ware is possible without variation.

"How would you like to know how stiff your clay is tempered?

"Would you like to be able to give definite instructions as to the temper at which your clay is to be worked? Would you like to make simple tests to learn at what density you ought to temper your clay and ascertain what is required in order to make the best ware and afterwards maintain this temper uniformly?

"Here is an instrument designed for this purpose. It consists of a steel spindle one-half inch diameter pointed at an angle of 60 degrees, weighted to 12 ounces and the necessary gears for operating a balanced pointer over a scale graduated 0 to 100.

Instrument Which Will Measure and Regulate Density of Clay.

"By simply placing the instrument on the issuing column of clay the degree of hardness is instantly indicated. This instrument was made for our own use in our clay testing room.

"In case sufficient interest is manifested, arrangements will be made for its manufacture."

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FOR KILNS
RIGHT QUALITY

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UNLOADING FOR 3 CENTS PER TON

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Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

OBVIATING SMOKE AFTER FIRING

1,018. *Illinois—I am a mechanical engineer who has recently been doing some work on clay products plants. Can you tell me why it is that even tho a kiln be under high heat and the air supply sufficient, black smoke will issue forth from the stacks after each period of firing?*

In boiler practice the bridge wall or arch consumes the uncombustible gases and black smoke seldom issues from the stack. With the brick setting in the kiln heated to incandescence, and the gases passing thru a checker work such as a brick setting, I fail to understand why the smoke is not consumed. Can you throw any light on this question?

Ellis Lovejoy, who is an expert on combustion, has volunteered the following information:

"I do not admit that boiler furnace combustion is smokeless. In the city of Columbus we have, or had, a city smoke inspector, whose business it was to reduce the smoke nuisance from factories, which he accomplished in numerous instances by requiring the installation of automatic stokers. Such a furnace can be regulated to nearly perfect and practically smokeless combustion, but the old hand fired furnaces smoke badly after each firing.

"Boiler furnaces have the advantage in properly designed and well constructed furnaces, in nearly constant fuel requirement, light firings, shallow fuel beds, and frequent furnace cleaning, but have the disadvantage of a low temperature contact surface thruout the length of the boiler and tubes.

"The (down-draft) kiln furnaces are crude, especially the grateless and inclined grate types; the firings range from periods of thirty minutes up to one hour and the firing is correspondingly heavy; the clinkering as a rule is done twice in twenty-four hours; the quantity of fuel fired each time varies with the condition required in the kiln. The advantage in kiln firing is the mass of hot checker work thru which the combustion gases must pass.

"If we were to fire a kiln as we do a boiler we would get very little smoke, probably less than in the boiler firing because of the mass of hot checker work, but we do not do so nor would it be economical—in fact, in some wares it would be impractical.

"Silica brick, for instance, require temperatures of cone 18 in the bottom of the kiln and to get such temperatures thru ten or more feet of checker work without at the same time getting excessive temperatures on top of the mass, we aim to get the products of combustion out of the furnace and among the brick as quickly as possible in order to get the maximum degree of combustion in contact with the ware. The furnace is scarcely more than a crude producer and the modern silica brick kiln is built with a wide open furnace throat to aid in getting the unburned gas into the kiln space. Furthermore, in order to get the desired temperatures we err on the side of less than 100 per cent. air rather than an excess essential to complete combustion.

"These conditions produce smoke.

"If our purpose is to prevent smoke we can easily accomplish it, but we are endeavoring to get a high and uniform temperature from top to bottom of a large mass of ware.

"Many clay wares are purposely 'smoked' to produce the dark flashed effects,—sometimes supplementing the coal firing with heavy oil or tar to produce the condition desired.

"There is no chance to eliminate smoke in such firing.

"In many wares which do not require high temperatures nor reducing kiln conditions we can greatly reduce the smoke from the stacks but not economically. We aim to burn a kiln as quickly as possible and with a minimum amount of fuel, and this we accomplish by keeping the combustion gases as nearly reducing as the ware will permit. The usual method of firing is to close the furnace mouth (in the inclined furnaces) with coal, which gives a maximum volume of gas with a minimum excess of air, which more rapidly advances the temperature of the kiln, and as the fires burn down and settle, the top of the furnace mouths are opened for the admission of secondary air to counteract any reduction effect which may have occurred during the first period of the firing. We get smoke but we gain more in kiln temperature advance than any loss which smoke indicates.

"Firing as we do, one man can easily attend 12 or more full fire furnaces and 12 or more low fire furnaces which he could not do if each furnace is fired as frequently as a boiler furnace and otherwise given the attention of such furnace.

"The excess air in boiler furnaces finds its way into the stack at a temperature around 550 deg. F. and the loss is not great, but in kiln work the stack temperatures advance to 1,200 deg., to 1,400 deg. and higher, and the loss thru excess air is excessive besides in many instances reducing the flame temperature to a point insufficient to maintain the kiln losses and burn the ware.

"There is undoubtedly an opportunity for improvement in firing many down-draft kilns but the production of ware and cost must receive first consideration."

A. V. Bleininger, who needs no introduction to readers of Brick and Clay Record, states that the formation of smoke in kilns is due entirely to the firing of excessive quantities of fuel during a short period of time.

"Some smoke must be expected during the early part of the firing when the gases of combustion are chilled by the ware. The colder the kiln charge the more smoke is to be expected. However, during the high fire period to which your correspondent refers there is no reason why smoke should be produced. That smoke is produced we all know but this is solely due to the charging of too large amounts of coal.

"It will be observed that upon firing a dense black smoke is formed, but that after some minutes the smoking ceases suddenly. At this point the volume of combustible gases has been reduced sufficiently so that the oxygen can get at them and burn them. During the smoking the volume of the combustible gases is so large and ascending with such a velocity, forming a river of gas, that the oxygen is mechanically prevented from getting access to the interior of this stream. As soon as the velocity is lowered and the volume decreased, the oxygen does secure access to the combustible gases and does burn them. This combustion is aided by the catalytic action of the mass of ware.

"I have seen many kilns which gave off very little smoke during the high fire for the simple reason that the firing charge was kept within the capacity of the furnaces and the kiln. The kiln, therefore, acts like the Dutch oven in a boiler and results in complete combustion if given a reasonable chance. It will smoke only if fired with disregard of all the principles of combustion. The simultaneous heavy firing of all the furnaces of a kiln is bound to result in smoking."

A. F. Greaves-Walker answered us as follows when we put the query up to him:

"It has been demonstrated beyond a doubt by making analyses

Why Use Coal For Fuel?

Write for catalogue.
Established 1905

It is expensive besides taking longer to burn your ware, and considerable more labor.

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The Schurs Kiln Burners in your kilns mean—Quick Burns, Better Colors, complete control of fire and

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Great Labor Saving

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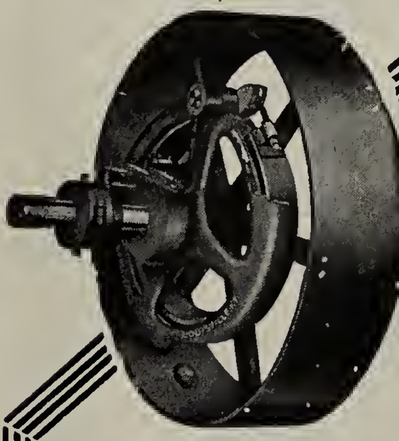

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It consists of only eleven parts—all so designed that their greatest strength is in the direction of greatest stress. A flexible band grips the entire circumference of the friction rim and transmits full power smoothly and steadily through any change of load and speed.

Ordinary clutch troubles—usually caused by one of several adjustments being too tight—are not possible in the Caldwell Clutch because one screw adjusts it; one lever controls it.

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Piano Wire Screens
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Located in the center of Ohio's clay territory, we are in a position to give you prompt and efficient service.

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Louisville Machine Manufacturing Co.
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Because the Buckeye mixes the clay so thoroughly when digging it, you have fewer "seconds", *less* waste and *better* profits.

Ask for catalog about Buckeye Gasoline and Electric Clay Diggers.

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Adel Excavator
The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

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AURORA, ILLINOIS

of gases from different parts of a kiln and also from the flue that reducing and oxidizing gases can exist and do exist at the same time without mixing and that such gases will flow in separate currents thru the brick setting, flues and stack and retain their indentity to the outside atmosphere.

"In my estimation this is due entirely to the fact that the air admitted for combustion does not get an opportunity to properly mix with the volatile of the coal at the proper point, which would naturally be just above the fuel bed. It has been demonstrated that if a kiln is fired in the same manner as a boiler and the fuel applied in a thin bed with the proper air mixture, that smoke can be eliminated in kiln firing. I am certain that if the gentleman attempted to fire a boiler with as heavy a fuel bed as is ordinarily used in kiln firing, that he would have exactly the same results no matter what the construction of his furnace."

W. C. Kirkpatrick, a well known consulting engineer in the clay industry, has the following to say:

"While the gentleman may think in the firing of his kilns he had admitted sufficient air, yet if he admitted sufficient air into his furnace, and if the furnace was properly constructed, having proper area for combustion, giving the time and temperature required for proper reactions, then it would be impossible for any black smoke to be delivered to the atmosphere, whether it passes thru an incandescent mass of brick or not.

"The trouble with ordinary kilns is that we attempt to obtain combustion without combustion chambers. We erect only fire-pockets, with the result that we form only a partial combustion in which sufficient air is admitted below the grates to combine with sufficient fixed carbon to generate sufficient heat to carbonize the mass of coal in the upper portion of the fire box or fuel bed. The carbonization which is effected under most wasteful conditions due to furnace construction, evolves large quantities of hydro-carbon gas which should be combined under proper temperature conditions with air in sufficient quantities to form a combustion, and if done would pass over the bag-wall largely CO_2 and non-condensable into festoons of soot.

"If the hydro-carbon gases pass over into the kiln before combustion takes place, large volumes will be broken up into fixed gases due to the high temperature of the ware, but other series will pass thru, into the stack in contact with a lower temperature and condense, forming black smoke. It would be just the same as passing steam thru a high temperature, or thru a checker work at 3,000 deg. F. After reaching that temperature it is still composed of its elements of hydrogen and oxygen, and if cooled will combine as water. But if other elements such as fixed carbon is in the checker work, the oxygen will combine with the carbon, liberating the hydrogen, a combustible gas, but unless completely dissociated and combined with other elements, the undissociated portion will condense into water.

"Efficient results cannot be obtained by trying to make a combustion chamber out of the kiln burning section, and the only way it can be done is to erect furnaces with proper combustion chambers, and to receive the maximum efficient result, all air must be admitted under positive control and superheated by waste heat. This can readily be done if the kilns are properly cased and insulated all around and over the entire outer area. Any round down-draft kiln, or rectangular down-draft kiln which is now in operation, can be reconstructed and equipped to save 60 per cent. of the fuel, if they are now using open fire boxes.

"Open fire boxes and uninsulated kilns are a menace to national economy and the result of unprogressiveness, ignorance and poor business methods which seem to be universal among clay products manufacturers.

"I notice that the mechanical engineer makes the statement that in boiler firing the bridge wall or arch consumes the smoke. This is incorrect. Watch any boiler smoke stack which is periodically fired, and for 10 to 15 minutes after refiring, black smoke will belch out, but in the stoker fed boilers in which the coal is fed continuously and with air under control, little or no black smoke is produced from the stack. But the hand fired boiler with a large Dutch oven combustion chamber greatly retards the flow of hydro-carbon gases as evolved, giving the time-temperature requirements with sufficient area to form combustion, and therefore greatly eliminates black smoke, not by consuming the smoke, but by forming a combustion of the hydro-carbon gases, that part of coal that produces black smoke under wasteful conditions."

R. K. Hursh, Associate Professor in Ceramic Engineering at the University of Illinois, answers the problem in this manner:

"It is my belief that the dense volume of smoke produced immediately and for some time after firing is due as usual to a deficiency of air supply. Throwing coal with a high volatile content on as hot a fire as is usually found in ceramic practice causes an exceedingly rapid evolution of gases, which would require an excessive quantity of air to burn completely. At this time the fuel bed is of a maximum thickness, the fresh coal tends to cake more or less and the opening to the fire box above the fuel bed is generally closed to a maximum degree. Thus, when the greatest amount of air is demanded, the supply is at practically a minimum.

"The fact that a deficiency of air is a condition at this period is indicated by the fact that the gases are so strongly reducing as to affect the clay ware itself and reduce any ferric oxide to a ferrous condition on the surface and to a greater or less depth in the ware."

⁂

OVERCOMING BLISTERS ON GLAZED WARE

1,020. *Ohio—We are manufacturing a hollow glazed building block, one side of which is smooth, one rock-faced, and two scored to take a mortar joint. We are having a great deal of trouble with blistering in the unburned state, a trouble which is of course aggravated by burning. The blisters almost invariably occur on the smooth face. These blisters are sometimes as large as a quarter of an inch high and three inches in diameter. They are, however, very rarely cracked open.*

The blocks are made on an auger machine and dried in a steam dryer. Humidity control during the drying process seemed to have no effect, nor did additions of grog. At present we are using 3/32 inch slotted screens and are pugging with hot water. The thickness of wall on the green blocks is about 1 1/16 inches.

We would appreciate it highly if you could give us a hint as to the source of the trouble, and a means of overcoming it.

This question was submitted to several competent ceramic men, and replies have been received which offer valuable suggestions.

"In answer to this question would say, in all probability the trouble is 'trapped air.' I suggest a trial of getting die three inches further from auger and a little less pitch on knives that deliver the clay to the auger.

"I have overcome air blisters in this way. Knives immediately behind the auger sometimes pack the clay up to it faster than the auger will take it and trap the air into the auger. Less pitch on knives gives a more granular and open delivery to auger and does not necessarily decrease capacity."

Another of the men questioned has the following solution:

"The trouble is without doubt due to the inclosed air in the clay, the air being under pressure as long as it is in the machine, but as soon as the clay leaves the die the pressure is released and forms the blister.

"It is noted that the ware blisters only on the smooth side. The blisters that might be, and undoubtedly are, on the rock-

Dryer, Transfer and Clay Cars, with Flexible Bearings.
Switches, Turntables and Track.
THE CHASE FOUNDRY & MFG. CO.
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CHASE

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

The Roessler & Hasslacher Chemical Company

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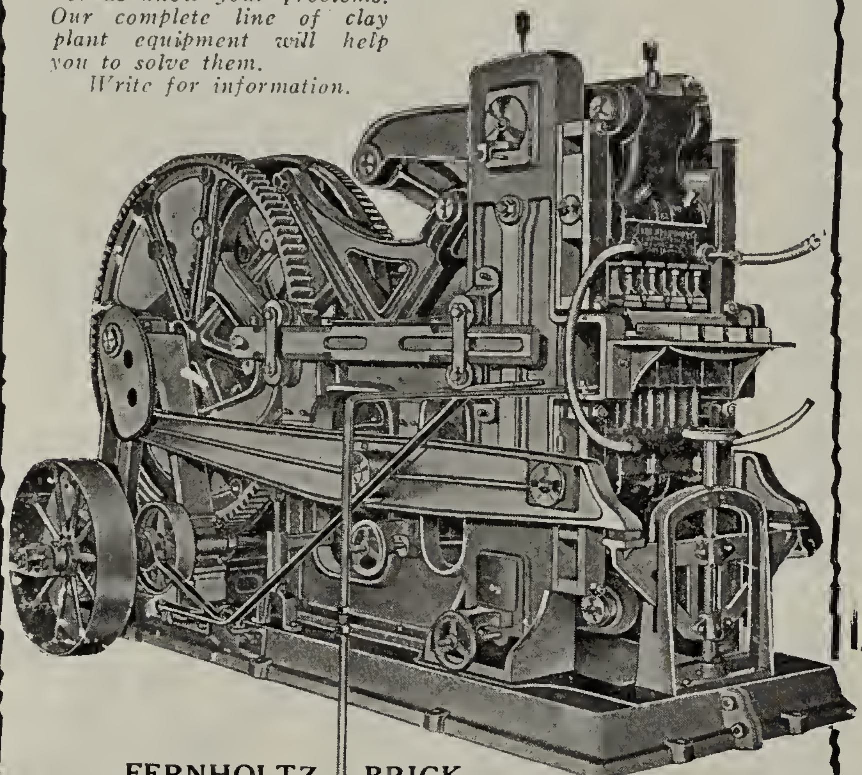
We know of no better nor more economical machine than the Fernholtz Brick Press. It will cut your labor and manufacturing costs to a minimum and its rugged construction insures long life and efficient service.

Let us know your problems. Our complete line of clay plant equipment will help you to solve them. Write for information.



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WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.
Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.
Start now to solve your production problems.

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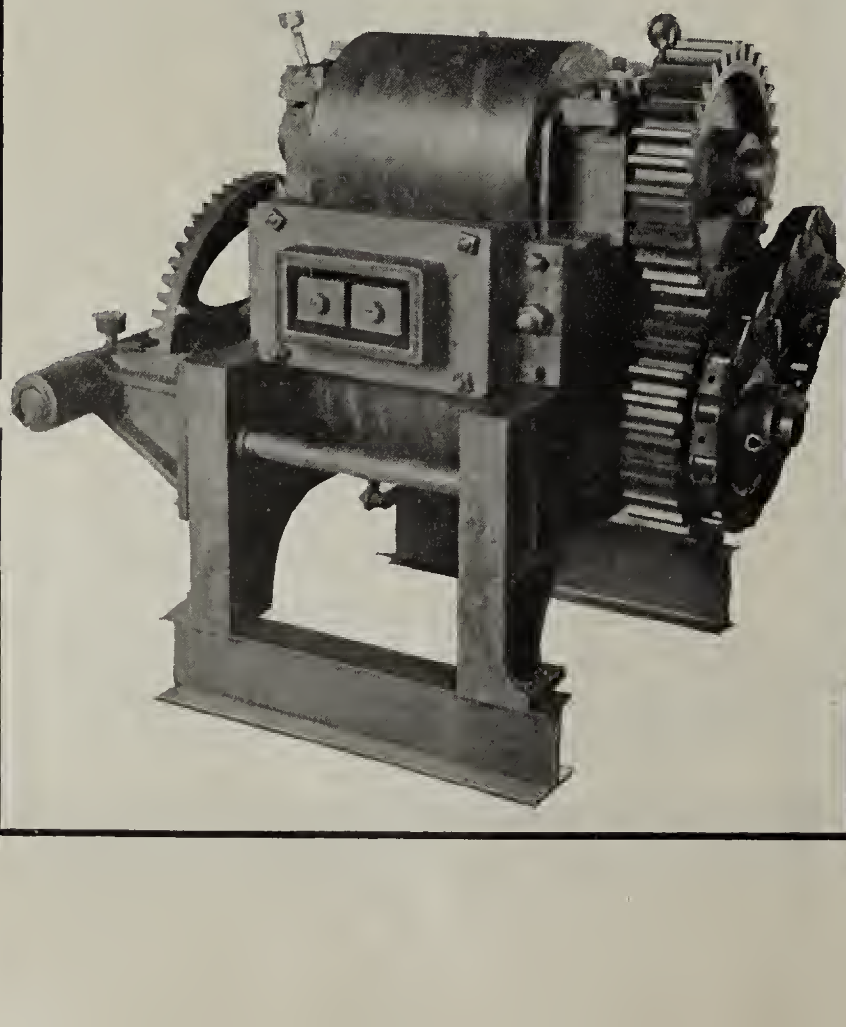
Everything for the Clayworker.



faced side, are rolled out by the roller, and the scoring liners prevent the clay from blistering on the other two sides.

"I would suggest that they try fastening some kind of a drag or baffle back in the die next the smooth side, just far enough back from the mouth of the die to allow the clay to finish properly as it leaves the die. The object is to break up the clay just before it leaves the die and thus release or break up the air pockets, before they have a chance to form in the finished ware.

"Are they quite sure that the blisters that show up after the burn are the same blisters that are formed at the machine? I have seen flue lining badly blistered at the press and no blisters after being burned."

Another suggestion to overcome this trouble is the following:

"The blisters on the hollow glazed building blocks are without much question caused by different rates of flow or clay thru the die of the auger machine.

"They may be the result of an uneven clay mix previous to the tempering operation. An uneven tempered clay, or a clay in a too dry condition generally gives trouble (laminates), due to the different degrees of friction established as the clay passes thru the die. Also an uneven or not thoroly tempered clay does not bond together (the smooth surfaces caused by the auger) after leaving the auger, sufficiently to act as a unit.

"When the pugger regulates the flow of clay and also the water by hand, the quantities vary and consequently the plasticity of the clay is not uniform as it leaves the pug-mill. The knives in the pug-mill may be worn or so placed that the clay is carried thru the mill before it is thoroly and uniformly tempered.

"Augers and hollow ware dies wear rapidly and require frequent attention.

"As the blisters appear mostly on one side of the blocks, it may be that the flow of clay thru the die is not uniform, caused by uneven friction in the die. The bridge or other parts may be unevenly balanced, thus offering more resistance to the flow of clay in that portion of the die.

"A slightly sprung auger shaft throws the pressure of the column out of line with the die opening.

"The distance of the die from the auger also is an important point to be considered, as in this area the pressure is somewhat equalized thruout the column and enters the die under a more uniform pressure. This varies with different clays and sizes of the ware produced.

"An uneven feed of raw material has a decided effect upon the flow and pressure of the clay column. Even tho a forced feed is used, if the hopper is not kept full the die pressure fluctuates.

"The working qualities of many clays are markedly improved by a short weathering and a good ware may be made from a weathered clay, while much of the ware manufactured from the same clay direct from the pit is lost.

"A thoro analysis of the clay and of each individual step in the manufacturing process may be necessary in order to locate the basic cause or causes of the trouble."

⁂

MIXING COAL WITH CLAY

1,019. *Tennessee—We are contemplating the mixing of coal with our clay, and would appreciate very much if we could get some information on this matter. What amount should be mixed and what style of crusher or grinder would be most practical for this purpose?*

We expect to mix it with the clay as it is tempered in the pug-mill. We have in mind one plant where cinders and salmon bats are mixed with the clay. In this case a dry pan is used.

A difficulty in using powdered coal in the composition of brick made under the stiff mud process is experienced frequently in burning out the coal during the burning period, owing to the hindrance offered to the entrance of the air necessary for combustion into the brick. If the clay is very plastic, and tight burning it is practically impossible to burn out the dust. No special difficulty should be encountered in this respect, however, if the brick are made soft mud. The important factor in burning brick containing coal dust is that plenty of time be given for a slow and complete combustion of the ground coal.

Coals high in volatile matter are dangerous to use for this purpose. When the coal in the brick reaches the ignition point, the evolution of the volatile hydrocarbons is so rapid that a bloated brick would result. For this reason, anthracite coals are most frequently employed for this purpose.

The amount added varies evidently with the clay used but probably 100 pounds per thousand brick represents a fair average figure. The Illinois Brick Co. uses 240 lbs. of hard coal screenings per M brick and these screenings are used as received. For general purposes the coal should be ground to about 8 mesh.

A very good pulverizer to use for grinding the coal would be one of those along the lines of the ring or hammer pulverizer.

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

DEATH OF W. J. STICKWOOD

W. J. Stickwood, brick manufacturer of Newmarket, died recently, aged 64. He was born in Cambridgeshire, England. He came to America and after residing in the United States for a short time came to Canada and established a brick plant at Newmarket, Ont.

PIONEER BRICK MAN DIES

Peter Olsen, a pioneer brick manufacturer of Salina, Kan., died at his home in that city, aged 75. He established the first brick plant in central Kansas in 1871. Floods damaged the plant in 1903, and in 1904 completely ruined it, after which the fires in the kilns were never rekindled. Mr. Olsen is survived by a widow, a son and daughter.

DEATH TAKES FRED KLUTEY

News received from Henderson, Ky., on January 17, told of the death in that city of Fred Klutey, Sr., 79 years of age, who came from Germany in 1863 and with Henry Kleymeyer established the first brick and tile plant in Western Kentucky. The Klutey-Kleymeyer interests for years have held the control of the brick and clay industry in Western Kentucky, having been interested in operations at Henderson, Evansville, West Point and elsewhere. Death occurred on Monday morning, January 16, at his home in Henderson. Mr. Klutey is survived by a daughter and five sons.

BOY KILLED ON CLAY PLANT

James Williams, 18 years old, was killed recently at the plant of the Harrisonville (Mo.) Brick & Tile Co. At the time of the accident the young man was working on the platform where the pug mill or shale mixing machine is located, directly above the brick molding machine. The last machine is low and the auger is revolved on a shaft, the end of which extends out a short distance, on which are located the power gears. The morning was cold and the young man was wearing an over-

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are serving in hundreds of plants thruout the country, where far-sighted engineers have wisely specified for economy.

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U. S. Silica Company, Chicago, Illinois
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Sheffield Brick and Tile Co., Sheffield, Ia.
Hastings Brick Works, Hastings, Nebraska

MARTIN GRATE is the only grate adjustable for all sizes of coal without the purchase of new parts. It is fool proof.

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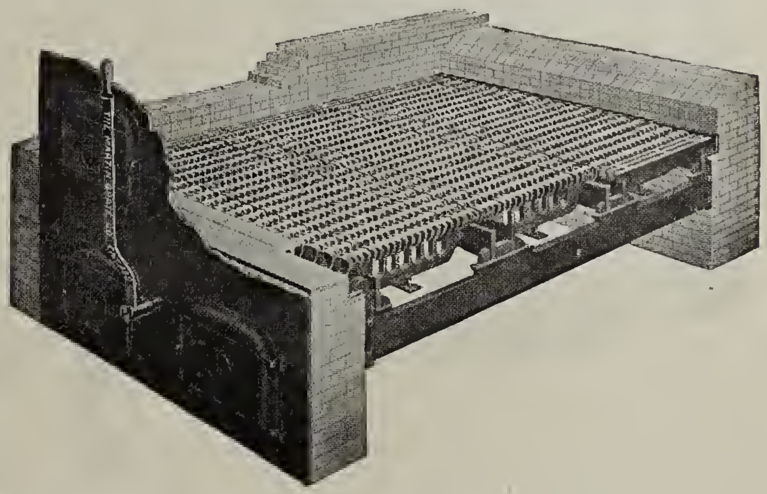

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The tempering of clay is one of the most vital operations in the clay plant, and also one of the biggest items of cost.

The poidometer will eliminate your pug mill man, temper your clay with 99.75% accuracy, and deliver the raw material at the rate of from 1½ to 21,000 pounds per minute!

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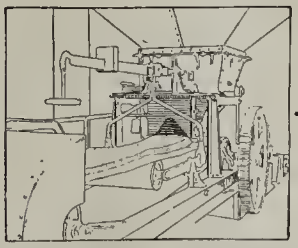

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San Francisco

coat. No one witnessed the beginning of the accident but in some manner a set screw, holding an iron collar on the shaft, caught the corner of young Williams' overcoat. In an instant the young man was dragged down and revolved with the shaft, hitting the platform with great force at each revolution. Before the machinery could be stopped his overcoat had been torn off and his body thrown near the shaft. His right leg was broken in two places below the knee, both bones of the right arm were broken above the elbow, there were scalp wounds with possible fracture of the skull and internal injuries. The accident occured at 9:30 in the morning and the young man died at the same hour that night.

JEAN DuBOIS SUCCUMBS TO ILLNESS

Jean DuBois, business manager of the Roessler & Hasslacher Chemical Co., Perth Amboy, N. J., and a well known figure in the business and industrial activities of the city, died, January 12, after a long illness. He was born in Switzerland in 1868, and leaves a mother and father still living in that country. He is also survived by his wife, a son and a daughter. He was a member of the Atlantic Waterways Association; president of the American Terminal and Waterways Association, and vice-president of the local Chamber of Commerce.

C. F. MATTES ESCAPES TO CALIFORNIA

C. F. Mattes, of the Decatur (Ill.) Brick Manufacturing Co., decided to escape the rigors of a northern Illinois winter, and answered the call of California's beautiful climate. He is spending some weeks at Monrovia, Cal.

ACQUIRES NEW SUPERINTENDENT

Ivan Johnson has recently been made superintendent of the Bloomfield (Ind.) Brick Co. in place of D. M. Lowe, who formerly held that position. The company reports that business at present is slow, altho until November it was exceptionally good.

HOWARD FROST TO VISIT CLAY PLANTS

Howard Frost, president, Los Angeles (Cal.) Pressed Brick Co., will probably visit the Bradford (Pa.) Brick & Tile Co. in the near future. On this trip he is also planning to visit the Flint Brick Co. at Des Moines, Ia. Both of these companies have been described in Brick and Clay Record, and have many interesting and successful labor saving devices which Mr. Frost is interested in.

CUTHBERT AND LUCKE GO SOUTH

T. P. Cuthbert, of the Fallston Fire Clay Co., Pittsburgh, Pa., has separated himself from the worries of business and is at present sojourning in Sarasota, Fla. He is devoting most of his energies at present to hunting, fishing and so forth, and will continue these pursuits during the balance of the winter.

F. W. Lucke, of F. W. Lucke & Co., Chicago, Ill., is also spending the winter in Florida, and will probably remain there until the end of February.

OPERATING FULL TIME

The Southern Sewer Pipe Co., Birmingham, Ala., says that business for the year 1921 was run on about full time.

This plant is now in full operation and an increase in business is expected this year over business last year. This is one of the biggest clay pipe works in this section of the country.

HOLLOW TILE PLANTS FAIRLY BUSY

The hollow tile plants of the Birmingham (Ala.) district are now being operated about 60 per cent. full time, and the managers report good prospects for future business.

Birmingham plants are furnishing the tile for the $3,000,000 plant of the United States Window Glass Co. now being built at Shreveport, La. Vast quantities of Birmingham hollow tile will also be used in a number of public school buildings to be erected in that city, as well as in a number of other buildings now being erected there. The new building of the Birmingham Trust & Savings Bank, now in course of construction on Twentieth St., is using a large amount of hollow tile.

SAYS 1921 NOT A BAD YEAR

Business with the building brick plants increased 100 per cent. during the last six months of the year 1921 over the output of the first six months of that year, according to John W. Sibley, of the Birmingham (Ala.) Clay Products Co.

"While December business was not equal to that of the preceding six months, it was far better than December, 1920. All in all, the last half of 1921 may be classed as very satisfactory, with plants operating and movement of product practically up to normal.

"The business of the entire year shows up much better than we anticipated. The plants which I represent made and shipped a total of 5,000,000 of face and common brick, compared with a normal of 6,500,000. The loss was entirely in the first half of the year. Our plants are now operating at almost full time in anticipation of a good business within the next 30 days.

"Birmingham face brick are shipped all over the southeast. These Birmingham made brick may be found in school buildings, in churches, in business blocks and in handsome homes, both inside and out, thruout the southeastern states."

IMPROVES MANUFACTURING FACILITIES

The Fort Smith (Ark.) Brick Co. has recently completed minor improvements which will improve face brick manufacturing facilities at the plant. The works are closed down at present, and when they are reopened round edge repress brick will be manufactured. The company is considering the advisability of installing a tramway for transportation of shale from pit to plant.

PROSPECTS BRIGHT FOR GOOD BUSINESS

N. A. Dickey, president of the Livermore Fire Brick Works, states that there is evidence of a big demand for his hollow building tile for bungalows, apartment houses and larger residences in Oakland, Cal. The prospects are very bright and indicate a decided increase in all building operations. He also states that hollow building tile and brick construction will be used very extensively during the year. All of the company's plants are running to full capacity. The company has the contract to furnish all the face brick for the Durant Motors Co.'s new plant that is now under construction in Oakland.

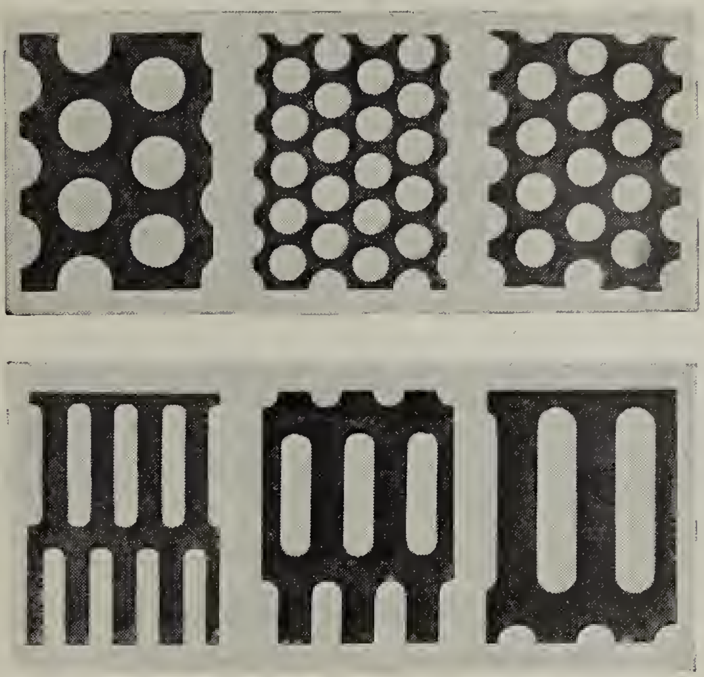
PLANS BUILDING NEW PLANT

Announcement of the company's intention within the next year, to build a new plant for the manufacture of fire brick, face brick, hollow tile and roofing tile at a clay mine recently purchased at Alberhill, has been made by L. S. Collins, general manager of the Los Angeles Brick Co. This company has recently installed a new hollow tile machine at plant No. 1, and will put in at this plant an automatic brick machine. Another brick machine will be put in operation at plant No. 3. The concern operates a brickbat crushing plant at its No. 1 works to produce a red product for roofing purposes, and molding sand for all soft mud plants.

PREACHES NECESSITY OF ARCHITECT

Competent architectural direction is a vital factor in modern home building. This is one of the important statements contained in a pamphlet recently issued by the service department of the Los Angeles (Cal.) Pressed Brick Co., showing the

Perforated Steel Screens



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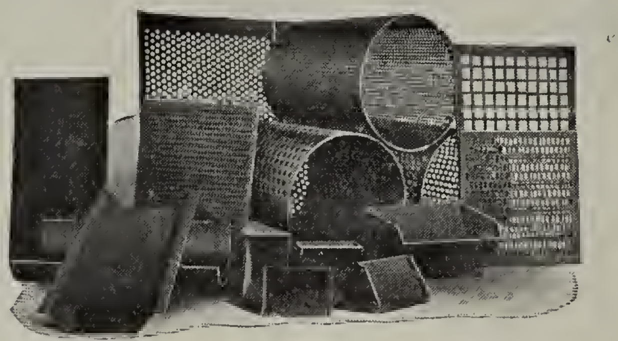

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durability, economy and beauty resulting from the use of face brick and hollow tile in residential construction. This booklet commends the work being done by the allied architects of the city, and points out the error often made by inexperienced builders in assuming that a satisfactory dwelling can be erected from a "pattern plan" without the supervision of an architect. Such supervision will minimize the faults which develop from poor workmanship, and increase the value of a building considerably.

DENISON OPENS WASHINGTON OFFICE

New office for the Denison Interlocking Tile Corporation, Cleveland, Ohio, has been opened at Washington. Headquarters will be in the Munsey Building. E. Taylor Chewning will be in charge of the new branch, and supervise the covering of the adjacent territory, which includes Maryland and Virginia, as well as the District of Columbia. Mr. Chewning formerly was general manager of the Pennsylvania Clay Products Co., and is president of the United Clay Products Co., Washington.

PURCHASES COMPETITOR'S PLANT

The Oconee Brick & Tile Co. of Milledgeville, Ga., has recently purchased the plant of the American Fireproofing Co., also of Milledgeville. The latter concern was established about a year ago for the manufacture of face and common brick. The new owners will probably enlarge the plant considerably. J. S. Bone, formerly president and general manager of the Oconee Brick & Tile Co., will manage the consolidated concerns.

FINZER BROS. WILL MAKE BRICK

Building brick will henceforth be manufactured at the plant of the Finzer Bros. Clay Co., Sugarcreek, Ill. An order for 100 carloads of brick for delivery in Cincinnati has been received.

Building blocks, silo blocks, and drain tile have comprised the output up to the present time.

ADDS $1,250,000 TO CAPITAL STOCK

An increase of $1,250,000 has been made to the capital stock of the William E. Dee Co., of Chicago, Ill., thus bringing the total to $2,000,000. This additional capital has been used to exchange for securities of three subsidiary companies which have been amalgamated with the parent company. These subsidiaries are the William E. Dee Clay Manufacturing Co., Mecca, Ind.; the William E. Dee Clay Products Co., Oak Hill, Ohio; the Harvey (Ill.) Motor Truck Co. The parent company was organized in 1855, and manufactures fire brick, tile, sewer pipe and other clay products.

* * *

The Paxton Fisher Lumber Co., Fort Wayne, Ind., has announced a desire to take on a good line of brick not now represented in Fort Wayne. All offers will be carefully considered.

STANDARD BRICK BUYS 40 ACRES

The Standard Brick Co., Evansville, Ind., has purchased a 40 acre tract of clay land in Knight Township, adjoining their present holdings for a consideration of $8,000. The company anticipates the need of more brick clay in the near future.

PLAN TO PUT IN NEW DRY PAN

Operations at the plant of the Krick-Tyndall Co., Decatur, Ind., are at present about 50 per cent. of normal. The company has recently installed a rotary dryer, pulverizer, pugmills and clay feeders and built a new clay storage room. It is planned to put in a new dry pan in the near future.

PROTEST HIGH BARIUM DUTY

Brick manufacturers in Indiana are protesting against the proposed tariff of one cent per pound on precipitated barium carbonate. John Andres, secretary-treasurer of the Standard Brick Co., of Evansville, has sent a protest to Senator James E. Watson, joining with other brick men in an effort to have the same tariff charge made now that was in vogue prior to the war and under previous tariff schedules.

In making an explanation of the protest, Mr. Andres says that during the war period the cost of the precipitated barium phosphate went up $60 a ton in New York, and because of the high price brickmakers could not use it in the manufacture of brick.

Formerly the barium carbonate cost $28 laid down in New York. The cost was made up as follows: The precipitate values at $20 per ton, the duty $3, and the exporters' profit $5. If the new duty goes into effect it will mean the precipitate will cost $40 per ton in New York.

The reason given for the protest is that its use will advance the cost of brick, and will delay the effort to lower the cost of that material in building.

NEW INDIANA ROAD SPECIFICATIONS

As announced in the last issue of Brick and Clay Record, important changes have been made in the specifications for brick and concrete highways in Indiana.

The old brick road specifications called for brick 4x3 inches, with the four inches up and down; for a concrete base made of a mixture of one part of cement, three parts of sand and five parts of coarse aggregate; for cement between the brick and for the whole to be laid on the concrete to form a solid road of what is called monolithic type.

The new specifications are to provide that the brick may be laid with the three inches up and down and the four inches horizontally. This will make the wearing surface one inch thinner. It will take considerably less brick to cover a mile and thus make brick road construction much cheaper. The new specifications provided that asphalt may be used between the brick instead of cement as in the present specifications. They are to provide that the brick be laid on a five inch concrete base with a sand cushion between instead of being laid in wet concrete as in the present monolithic type construction now required. The new specifications are expected to reduce the cost a mile of brick roads, altho the roads are expected to be less durable.

The present specifications for concrete roads call for a single course of concrete seven inches thick. The new specifications will require the concrete roads to be one inch thicker in the center, so that they shall be seven inches thick at the sides and rise to eight in the center. This will increase the cost and also improve the durability of concrete roads, it was said.

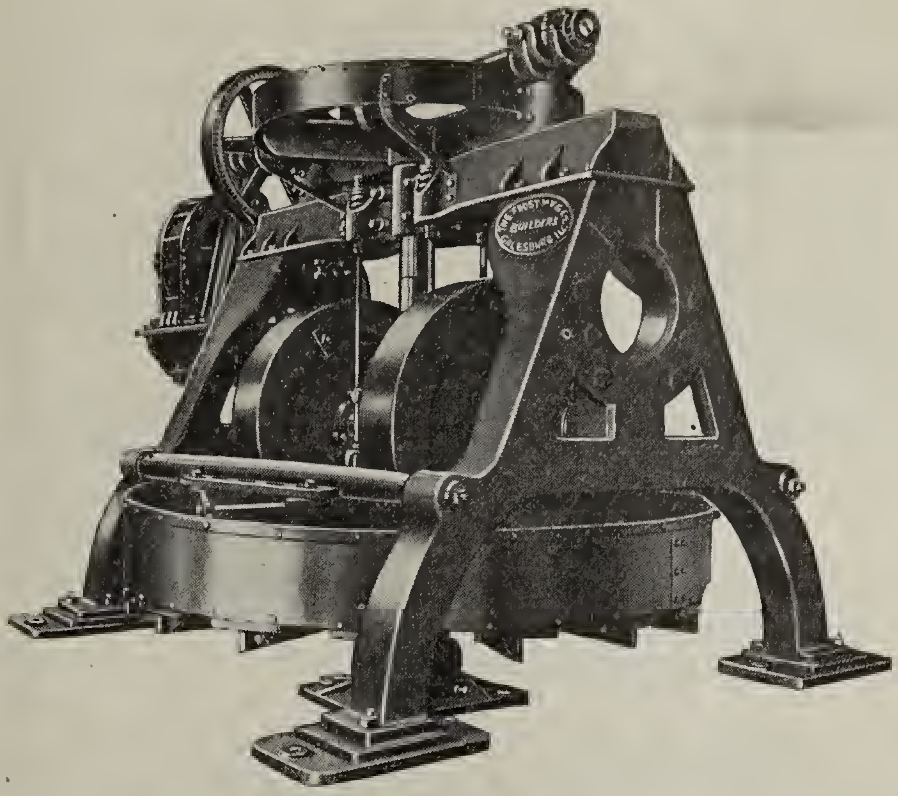
The whole idea, it is understood, has been to get the brick and concrete specifications so that regardless of durability the cost a mile would be more comparable.

MAY INSTALL NEW TUNNEL DRYER

The Eldora (Ia.) Pipe & Tile Co. is contemplating the installation of a new tunnel dryer. Business has not been good and at the present time the company is not planning on any campaign to increase the market. About 95 per cent. of the concern's product is marketed thru dealers.

CONTEMPLATING TRAMWAY INSTALLATION

An ingenious device which facilitates the moving of material from the upper floor of the plant is used by the Hedrick (Ia.) Tile Works. It is a one-man elevator, and very easy to operate. A truck is run onto the elevator and when the brake is released the elevator comes down. After the truck



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Now is the best time to start using the Marion, because 1922 is the year that every clay products manufacturer must reduce his costs.

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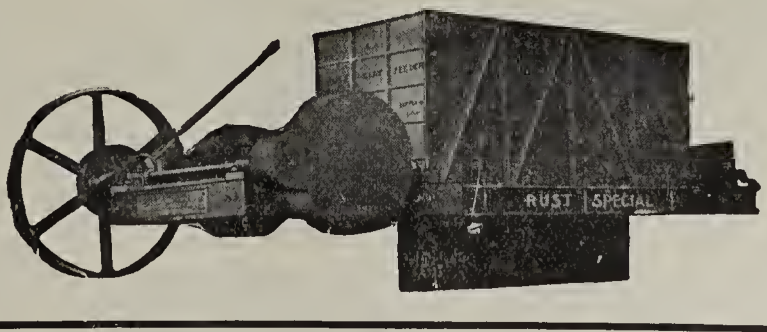

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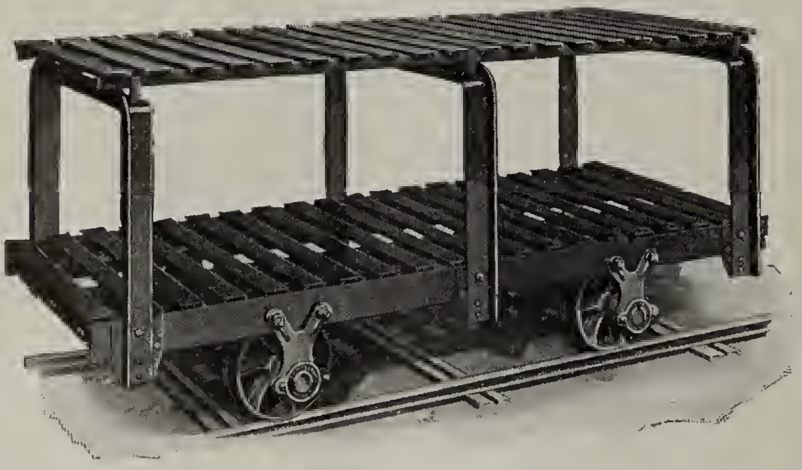

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has been emptied the counter weights on the elevator draw it back up.

All cinders and tile bats are ground up and worked into the tile, which facilitates drying considerably. The company is thinking of installing an overhead tramway that will move 16,000 pounds of raw material an hour over a distance of 620 feet.

DESIGNS NEW TYPE FACE BRICK

The Coffeyville (Kan.) Vitrified Brick & Tile Co. has brought out a new building brick of mat face type, which has not yet been named. The new product is being manufactured at the Cherryvale plant of this concern, and officials of the company recently demonstrated to the city commissioners how the brick will look in a building by erecting a wall on the city hall lawn in that town.

FREDONIA BRICK CO. WORKING AGAIN

The Fredonia (Kan.) Brick Co. resumed operations about two weeks ago after a shut-down during which extensive repairs and improvements were made. A considerable number of men are employed, and more will be added when the plant is run at maximum capacity.

The Excelsior Brick Co. in the same city will continue to run as long as weather conditions permit. An extended mild winter will make it unnecessary for the plant to suspend operations at all. Sixty men are employed by this concern.

CORAL RIDGE TO OPEN SOON

The Coral Ridge Clay Products Co., having stocked fairly well on brick and tile, and bumping into the meaner weather period, along with needing time for a few repairs, has closed down its plant, and expects to resume about February 1.

PRICES IN LOUISVILLE STEADY

Prices in Louisville remain rather firm, some manufacturers asking $15 for common brick on board cars, and $18 delivered, and $25 and $30 for face, these prices subject to five per cent. ten days. However, one house anticipated lower prices, and believes that spring prices will show net prices delivered, cash, at around $13 for hard and $20 to $22 for face, with salmon probably at around $10.

$50,000,000 FOR KENTUCKY ROADS

A bill has been introduced in the Kentucky Legislature calling for $50,000,000 road improvements, to be bounded and scattered out over a term of years. A good deal of work was done last year, and a lot is to be done this year. This road work is making for an active demand for sewer pipe. General residence and other construction makes brick promising, and hollow tile is largely a question of how many of the larger buildings, or buildings using fireproof construction will be erected.

C. N. ADAMS SELLS BRICK PLANT

After spending 25 years in the brick business, C. N. Adams of Alexandria, La., has sold his plant to J. H. Johnson, who will operate the plant at Alexandria under the name of the Adams Brick Co. The officers of the new concern are J. H. Johnson, president; W. D. Hill, secretary and treasurer. These two men, with J. F. Foisy, Robert Stack and Dr. J. A. Packer, form the board of directors.

Mr. Adams, aside from his brick business, was very prominently connected with the civic development of his home town, Alexandria, serving a two years' term as mayor.

BALTIMORE BRICK SELLS PROPERTY

The Baltimore (Md.) Brick Co., has disposed of its property at East Avenue and Jefferson Street, in the New Annex section, for a consideration said to be $11,200, and the site will be used for the erection of a new building for other service.

MICHIGAN RATES HOLD UP BRICK PRICES

A drop of $2 per thousand in the price of brick would be possible by reduction in freight rates, it was stated by several Michigan manufacturing concerns when offering bids for 75,000 brick for the Ionia Reformatory. These organizations are seeking lower rates thru the Public Utilities Commission and the Interstate Commerce Commission.

MAKING $200,000 PLANT ADDITION

A new one-story, fireproof building, measuring 112 by 420 feet, is to be erected by the Kalamazoo (Mich.) Sanitary Manufacturing Co., according to an announcement made by Edward V. Brigham, manager. This addition to their present plant, which will cost $200,000, will make the concern the largest producer of earthenware in the United States, it is said. Their output will total three carloads of sanitary ware every seven days, double the present capacity.

The kiln addition, a room 420 feet long and 64 feet wide, will house two kilns each 375 feet in length. Space will be provided for a bisque wareroom, a dipper room, a dry room, a green sagger dry room, and an addition to the present shipping room. When the new building is erected the main building will have a length east and west of 1,000 feet.

"One of the most important improvements made in our equipment is the introduction of a sagger machine, designed by Frank Emrick," said Mr. Brigham. "It was built in Kalamazoo and is the only one of its kind in the world. By its use four men are able to turn out 400 saggers in an eight hour work day. Under the old system a skilled workman could make 50 saggers a day, provided they were all perfect."

The additional manufacturing facilities will increase the working force of the concern from 125 to 175 men. Extension of the heating system is another improvement now being considered at this plant.

STARTS AFTER LONG SHUTDOWN

The Versailles (Mo.) Clay Plant, after being closed for several months, has again been put in operation. At present about 40 men are employed and this number will be increased until the normal force of about twice that number of men has been put to work.

FIRE DAMAGES CLAY PLANT

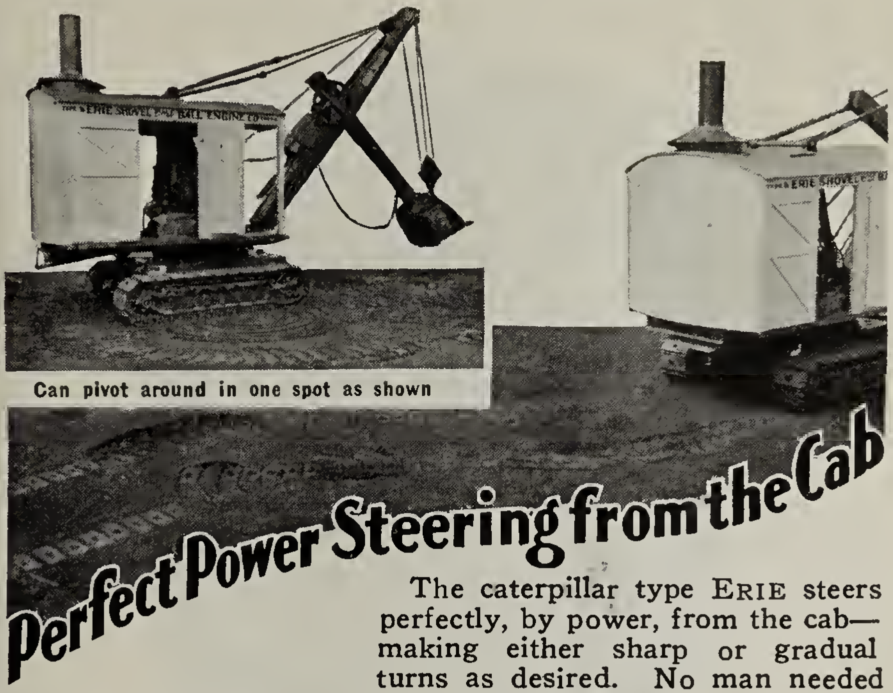
A fire which started in the fan room, adjoining the drying room of the Versailles (Mo.) Fire Brick & Clay Co., threatened to develop into serious proportions but was stopped thru the efficient work of a large force of volunteer fire workers from among the citizenry, who responded when the alarm of fire was given. Damage to a motor belonging to the company proved to be the largest part of the loss.

TO INCREASE OUTPUT CONSIDERABLY

The Parker-Russell Co. of St. Louis, Mo., who purchased a clay mine at Wellsville, Mo., several years ago, when the scarcity of clay at their St. Louis plant necessitated their coming out into the state, are planning to improve the Wellsville plant and increase the output considerably. Electric mining machinery is to be installed, and the C., B. & Q. R. R. will build a spur for the plant. At the present time about 12 men are employed, but after the new equipment is put in operation this number will be increased to 40 or 50.

ESTABLISHES BRANCH IN NEW MEXICO

A branch business is to be established in Roswell, N. M. by H. F. Ireland, a well known brick manufacturer of Las Vegas. He is getting ready to open business on a considerable scale,


Can pivot around in one spot as shown

Perfect Power Steering from the Cab

The caterpillar type ERIE steers perfectly, by power, from the cab—making either sharp or gradual turns as desired. No man needed to walk alongside and throw clutches to steer.

The elimination of this clutch-throwing job cuts one needless man off the pay-roll. This is just one of the many ways in which the caterpillar type ERIE saves you money.

For working over soft ground, a caterpillar type ERIE means the saving of thousands of dollars for you. We would like to tell you about its many advantages in detail—and send photos. Write for Bulletin B-60.

BALL ENGINE CO., Erie, Pa., U.S.A
Builders of ERIE Steam Shovels and Locomotive Cranes

And in many other ways the caterpillar type ERIE is far superior

FULLY LUBRICATED: Tread links and rollers are automatically lubricated by internal reservoirs.

ALL STEEL TREADS that are almost indestructible.

CLIMBS GRADES as steep as 30 degrees, and travels several times as fast as is possible without lubrication.

EASILY INTERCHANGEABLE with traction wheel mounting on the same truck frame.

IN EVERY WAY, fully up to the standard of the ERIE Shovel.

ERIE Revolving Shovels

BALL Engine Co. Erie, Pa.

COKAL
HAND STOKERS

The well-established success of COKAL STOKERS is a logical result of STOKER manufacture.

Simplicity, durability, quality. These three leading factors of STOKER success are built in COKAL STOKERS.

Isn't it well worth your while to investigate a stoker that has proven itself worthy thru many successful installations?

Write us today for complete information

COKAL STOKER CORPORATION
347 EAST OHIO STREET, CHICAGO

HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner and Grinders

Especially Prepared for Brick Making

Sales Office: CHARLESTON, W. VA.

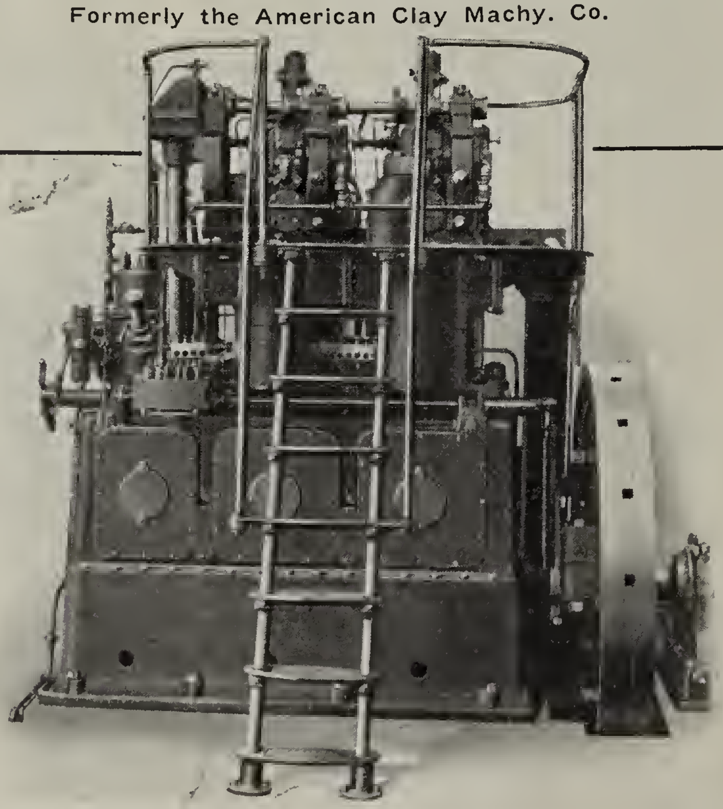
DIESEL ENGINES FOR CLAY PLANTS

Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal type sfurnished.

THE HADFIELD-PENFIELD STEEL COMPANY
Bucyrus, Ohio
Formerly the American Clay Machy. Co.



and may later expand to the opening of a factory in that locality.

IMPROVE MANUFACTURING FACILITIES

The Greenpoint Fire Brick Co., of Brooklyn, N. Y., has so improved its baker oven department that it will now be able to take care of all orders. For several years this concern could not make prompt deliveries of their high grade oven fire brick and tile, owing to lack of facilities.

The high duty oil burning fire brick department is working at its fullest capacity, having many orders from leading steamship companies, oil refineries and oil burning apparatus engineers using "Armor" brick in their installations.

BROOKLYN PLANTS CLOSING DOWN

All but three or four plants in the Fall River district, Brooklyn, N. Y., have closed down for the season. The remaining busy plants are able to operate because of their artificial drying equipment. This equipment is successful since it enables a plant to operate all thru the winter, but on account of the large investment involved to install it, many of the older manufacturers hesitate. According to W. K. Hammond, a prominent brick man of this district, the total output of brick in 1921 was 40 per cent. greater than in 1920, but there is less stock on hand than last year. Anticipation of labor troubles during the first of the year has caused many operators to dispose of their stock.

MODERN PLANT RISES FROM ASHES

Operations have been resumed at the plant of the Duffney Brick Co., Mechanicsville, N. Y. This plant was destroyed by fire on September 15, 1921, involving a loss of about $200,000. The boiler room of the rebuilt plant has been equipped with a battery of four boilers, each carrying 125 pounds steam pressure, and developing 550 horsepower.

Oil is now being used to burn brick, and it is a vast improvement over the former method of wood burning. It is claimed that a kiln of 500,000 to 1,000,000 brick can now be burned in 60 hours, whereas formerly it took seven days to burn with wood. The plant employs about 100 men, and steady operation is practically assured by the numerous orders on the company's books.

The cost of rebuilding the plant is estimated to be approximately $175,000, and to this should be added the cost of installing new machinery, about $75,000. Directors and officers of the company are Dr. J. M. Purcell, president; Mrs. Ella G. Orcutt, vice-president; Mrs. Agnes Purcell, secretary, and Richard A. Moore, treasurer.

CALLS BRICK "OLD HOMESTEAD"

The Burton-Townsend Co., Zanesville, Ohio, has adopted the name "Old Homestead" for one of the varieties of face brick which it manufactures. The name will be used as a trade-mark in the marketing of this brick.

CLOSES DOWN FOR REPAIRS

The Kulp Brick Co., located on Frebis Avenue, Columbus, Ohio, manufacturer of common brick, is taking advantage of a shut down to make a number of necessary repairs to its plant. J. J. Kulp is president.

NEW OHIO FACE BRICK COMPANY

The Summitville (Ohio) Face Brick Co. has been incorporated with a capital of $85,000 to manufacture face brick and other clay products. Incorporators are C. A. Manchester, J. C. Argetsinger, F. B. Powers and D. F. Kennedy.

WINDS UP YEAR WITH GOOD ORDERS

Additional proof of a better year end than was expected is shown in the larger number of orders received at the windup of December at the Cleveland (Ohio) branch of the Hydraulic-Press Brick Co. Phone orders were received for 150,000 face brick, an unusual experience at any time, but especially so under present conditions. The closing of 1921 was better all around than the end of 1920, according to Arthur S. Fielding, manager. No new lines are planned by Hydraulic-Press at this time, but the comparatively new Bokhara verticut face brick, in a full color range and of standard size is meeting with increasing favor right along.

OPTIMISTIC OVER FUTURE

H. F. White, manager of the brick department of the Hocking Valley Products Co., is one of the brick men in the Buckeye Capital who is very optimistic of the future. He believes that a fair demand for face brick will develop in the winter and spring months.

EAST LIVERPOOL CONCERN BUSY

The East Liverpool (Ohio) Face Brick Co., of which Harry A. Horwell is general manager, has declared that the demand for face and building brick in the eastern market, so far as his business is concerned, is excellent. This firm may be compelled to erect an additional kiln ere long, occasioned by the increased business being offered the firm.

LABOR TROUBLES SETTLED—RESUMES

The Claycraft Brick Co., of Columbus, Ohio, which has plants at Shawnee and Groveport, has placed the first-named plant in operation after an idleness of several months. Some labor difficulties arose, and a number of conferences were held between the men and the company officials. The plant makes buff and gray brick. The Groveport plant has been in operation for some time.

HAVILAND CLAY WORKS CHANGES HANDS

On January 3, 1922, the Haviland (Ohio) Clay Works passed from the ownership of C. M. and C. E. Mumma to James Godshalk, of Three Rivers, Mich. Mr. Godshalk will operate the plant as business justifies. The former owners will leave Haviland shortly and will go to their large Michigan farm at Flowerfield, St. Joseph County, to engage in agricultural pursuits and stock raising.

WILL EXHIBIT AT "FARMERS' WEEK"

The Franklin Brick & Tile Co., of Columbus, Ohio, has arranged for a large exhibition of its products, principally drain tile, at the annual "Farmers' Week" held under the auspices of the College of Agriculture of the Ohio State University at Columbus, January 30 to February 4. Thousands of farmers gather at Columbus during the week to receive instruction at the university. The display of the Franklin Brick & Tile Co. will be in one of the large buildings on the campus. The company will also have a display of its products at a farmers' show to be held at Harrisburg, Pa., January 23 to 28.

DECLARES SIX PER CENT. DIVIDEND

The Ironclay Brick Co., of Columbus, Ohio, which operates plants at Shawnee and Hanford, Ohio, held its annual meeting recently at the office in the Ruggery Building, Columbus. The usual dividend of six per cent. on all the company's stock was declared, and plans were made for the coming year. Officers were elected as follows: W. D. Brickell, president and treasurer; C. J. Near, Cincinnati, vice-president, and J. M. Adams, secretary and general manager. David Lehman was made sales manager, and Ralph McCullough, auditor.

Burning is the Most Important and Most Costly step in the operation of any Clay Products Plant.

The cost and the quality of the results will MAKE or BREAK any company.

Why is it that some manufacturers will spend good time and money going in the minutest details to improve the methods of manufacture up to the point where the kilns are lit and then turn not only the MOST IMPORTANT and MOST COSTLY operation, but the one that determines their SUCCESS or FAILURE, over to men, who at times cannot even read or write?

Is it any wonder that government records show that ONE out of every NINE clay products plants go into DISCARD every year?

The reason is that those manufacturers do not realize that WILSON-MAEULEN TAPALOGS are just as easily and thoroly understood by laborers and burners with no education as by superintendents or owners with college education and many degrees.

Successful clay products plants turn their burning problems over to the Tapalog to guide, look after, instruct, watch and record the burning operation. No owner of a Tapalog has ever gone into the annual discard.

Write for complete information.
It will not obligate you.

WILSON-MAEULEN COMPANY

Concord Avenue and East 143rd Street
NEW YORK CITY

Here's one Clay Plant Operator who really has Cut his Pit Costs

Read this letter from Mr. Hill of the Albert W. Hill Co., Coatsworth, Ont.

"I am enclosing a photo of my Bay City Clay Digger with a twelve horse power direct current motor which costs me practically nothing for power as I generate the current with the same gas engine that drives the fan for my dryer. I am getting plenty of clay with a perfect mixture from one man and the digger which I could not get with hand labor. I am well satisfied with the Bay City Clay Digger."

This plant is one of many plants with a capacity of 25,000 to 100,000 brick per day which are successfully winning their clay by this method. The One Man Excavator has taken its place in this day of high labor and freight rates as the most efficient and economical method of speeding up production in smaller plants.

The One Man Excavator is simple, dependable, and will operate in rain or shine. Driven by gasoline or electric power and will displace a dozen men from the pit. No other machine like it on the market.

We also furnish Excavator with caterpillar treads.

Write for full information

Bay City Dredge Works
Bay City, Michigan

SHOWS HOW MODERN BRICK ARE MADE

First public exhibition of modern methods of brick construction has been opened by the Cleveland (Ohio) Builders' Supply & Brick Co. in the Builders' Exchange at Cleveland, where three standard types of brick wall have been built. These include the new Ideal wall of brick, with an exterior of face brick; the tile backed wall with face brick, and the common brick wall.

This company also is showing how shrinkage in brick in its process of manufacture extracts the moisture. Three face brick have been used, together with rules, showing the sizes during the different stages. The first is 9⅛ inches long when taken from the die, the second is 8¾ inches long when taken from the dryer, and the third, representing the completely finished brick, is 8¼ inches long. The widths and heights are proportionate, of course. The first brick weighs close to eight pounds, and the last six pounds.

COLUMBUS BUILDS MANY HOMES IN 1921

The records of the Columbus, Ohio, building department for the year 1921 shows that home building was one of the big features of construction work in Columbus. The department issued a total of 4,750 permits during the year for structures estimated to cost $9,265,110 as compared with 2,822 permits and a total valuation of $10,257,170 in the year 1920. During December the department issued 208 permits with a valuation of $394,665 as compared with 129 permits and a valuation of $554,910 in December, 1920. During the year the number of dwellings licensed was 1,073 as compared with 294 in 1920. This shows that home building was the big feature and indications point to considerable home building during the winter months in case the weather permits.

Four million dollar high school buildings will be erected in Columbus during the spring and summer.

OHIO LOOKS FOR BETTER TIMES

Better times are in prospect during 1922 than obtained during the year just closed. This is the composite view of secretaries of approximately 700 building and loan associations in the Buckeye State. The indications point to more home construction, an easier money market and easing up of conditions generally. With these thoughts in mind, building and savings institutions, which cater to home financing, are preparing to take care of an increased demand for funds for construction work.

According to James A. Devine, secretary of the Ohio Building Association League, the people of Ohio are realizing that if they expect to borrow money from building and loan associations they must support them by depositing their money in them. Building, loan and savings associations in Ohio made a gain in assets during 1921 of $63,169,096. They have 543,191 stockholders and 403,171 borrowers.

AMSLER-MORTON MOVES

The Amsler-Morton Co. announce the removal of its general offices to 1317 Fulton Bldg., Pittsburgh, Pa.

GETS ORDER FOR 600,000 BRICK

The New Castle (Pa.) Mining & Clay Products Co., has been awarded the contract for 600,000 brick to be used in the construction of the new Toledo, Ohio, high school building.

TO OPEN BRANCH AT NEW CASTLE

The Concord Coal & Clay Co., a Delaware corporation, has filed notice at Harrisburg, Pa., the state capital, of its intention to transact business at New Castle, Pa.

SHUTS DOWN TEMPORARILY

The Van Dyke (Pa.) Silica Brick Co., has discontinued operations temporarily at its plant, with plans to resume at an early date. The company has a good stock of material on hand.

SADDER BUT WISER BRICK MEN

Our heartfelt sympathy is extended to the brick manufacturers of Beaver Falls, Pa., for the great loss recently sustained by them. Thru foul means these men were deprived of a considerable part of their "private stock" and—but read what the "Clearfield (Pa.) Republic" has to say:

"One of the Burns Detective Agency operatives had a rip-roaring splashing time in Beaver Falls for several weeks last month representing himself as an agent of the French government buying millions of building and paving brick for rehabilitating programs over the seas. The dozens and dozens of brick manufacturers in the Beaver Valley wined and dined the "agent" day and night. Several large projects were started on paper to build new brick plants and millions of French money was in sight for all concerned. When the "agent" was ready for the grand expose he uncovered and between 25 and 30 of Beaver Falls best citizens are under bail for violation of the liquor laws of Pennsylvania and the Volstead Act."

LOCK HAVEN B. & T. TO RUN ALL WINTER

Steady employment far into the summer is assured for the employes at the plant of the Lock Haven (Pa.) Brick & Tile Co. W. W. Swengel, general manager, has just closed a contract in New York City for a large order of brick, which will keep the plant busy for some time.

NEW COMPANY PLANS LARGE PLANT

The Dixie Lime & Clay Products Co., organized recently with headquarters at Dayton, Tenn., started operations of its coal lands early in January and when the mines are at full capacity the company plans the construction of a plant at Dayton for the manufacture of common and face brick. Later it is planned to also manufacture other clay products and tile. Initial output of the brick plant, according to present plans, will average about 100,000 brick per day, and officials of the concern state that they expect to have the plant in operation within the next four or five months.

This company is capitalized at $750,000 and at the time of its organization it acquired about 3,300 acres near Dayton, said to be one of the best coal, lime and clay tracts in the southern territory.

WORKING ON RESTRICTED SCHEDULE

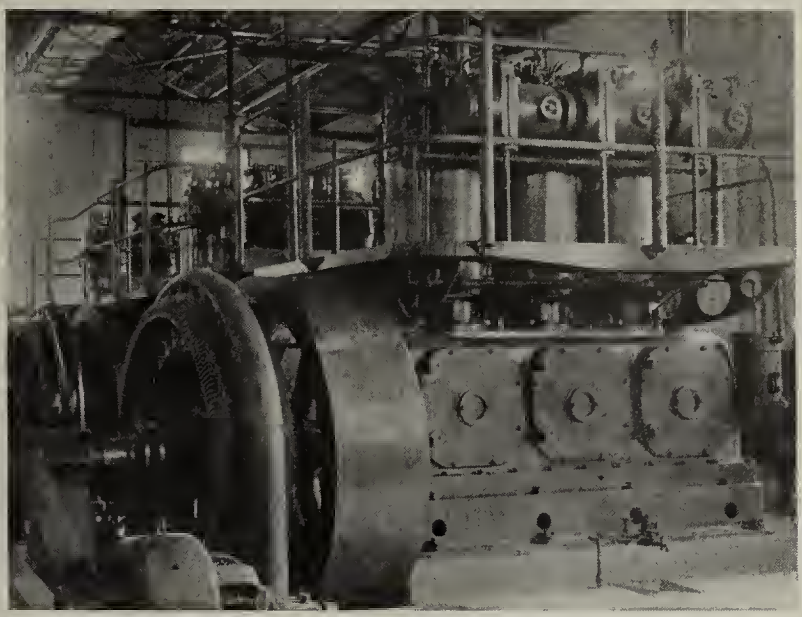
The Crip Pressed Brick Co., Ennis, Tex., has resumed production at its plant, following a shut down for some time past, and has adopted a working schedule of about 20,000 brick per day.

PANHANDLE BRICK STARTS

The Panhandle Brick & Tile Co., Amarillo, Tex., has commenced operations at its new local plant, recently completed. The company has clay properties for raw material supply in this section, and will use natural gas as fuel at the yard. It is planned to conduct production on a basis of about 100,000 brick a day until further notice.

PURCHASE TEXAS PLANT

Joe Jolesch, I. Jolesch and E. Raphael have purchased the brick plant at Groesbeck, Tex., and have incorporated under the name of the Groesbeck Standard Brick Co. with a capital stock of $40,000. The new owners have put the plant in first-class condition and are now running to capacity. Considerable adjoining property has been acquired, upon which the company expects to erect homes for its employes.



THE RIGHT ENGINE FOR EVERY SERVICE—

A Rathbun Gas Engine

Unfailing low cost is obtained with RATHBUN gas engines, no matter what size the plant, nor how strenuous the service. They give utmost dependability and long life, with minimum care and low maintenance cost.

RATHBUN gas engines are built with 2, 3 and 4 cylinders, and in some cases, for particular purposes, with 6 and 8 cylinders. They operate on natural, producer, illuminating or by-product gases—quiet, economical, reliable.

Write for our latest catalog. It is free, and full of valuable information.

Rathbun-Jones Engineering Co.
Toledo, Ohio

Un-retouched photograph of Goodyear Blue Streak Belted Bucket Elevator in the service of The Marble Cliff Quarries Company, Columbus, Ohio

Five Years of Lifting—and the G. T. M.

"The best record ever made on elevator service in our plants," says H. J. Kaufman, Assistant General Manager of The Marble Cliff Quarries Company, Columbus, Ohio, "was made by a Goodyear Blue Streak Belt, specified to the job by a G. T. M.—Goodyear Technical Man."

Every quarryman knows the punishment a belt gets in bucket elevator service. It is exposed to changing weather. It is showered constantly with grittily abrasive stone dust. It is subjected continually to sudden and severe strains as the buckets take up their load of rock. It has to stand up to the steady pull of the loaded buckets as they rise.

No wonder that ordinary belts, coming to such a job without any special construction in their favor, swiftly developed the troubles the Marble Cliff's superintendent experienced with them for years. They averaged only a few months in life; the very best of them lasted two years, and was regarded as a marvel.

Then the G. T. M. came along, and his proposal, to analyze the elevator requirements and specify a belt exactly to those requirements, impressed the Company's officials. His study included every mechanical detail of the problem—the weight and number and spacing of the buckets, the average load, the belt speed. The plant superintendent co-operated, supplying full data on the working conditions.

A Goodyear Blue Streak Belt, 38-inch, 10-ply, was the G. T. M.'s recommendation. It was installed in 1914—the first year of the World War. It was removed from the pulleys on May 1, 1919, five months after the end of the war, with the trouble-free service record of having carried between 1,500,000 and 2,000,000 tons. After withstanding every hardship in the day's work for five whole years, it was retired in favor of the new Goodyear Blue Streak Belt that is already in its third year of lifting.

Whether your problem is one of Conveyor or Transmission Belts, whether it involves a single drive or an entire factory, the G. T. M. will gladly undertake the study of it for you. For further information about the G. T. M. and Goodyear Belts, write to The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR

Copyright 1922, by The Goodyear Tire & Rubber Co.

Shale found on the property of this concern is of a very high quality and burns to a solid red color. The brick made from it are in wide demand.

WILL ISSUE $400,000 GOLD BONDS

The Salt Lake Pressed Brick Co., Salt Lake City, Utah, has received authorization from the state securities commission to dispose of $400,000 worth of first mortgage refunding gold bonds with a ten per cent. sales commission. The company desires to take up a large portion of its indebtedness by selling the bonds, since the entire capitalization is outstanding.

A pressed brick plant in Salt Lake City and three clay beds having a combined acreage of 1,696, comprise the assets of this concern.

COMPLETES 44,000 TON ORDER

The Utah Fire Clay Co., of Salt Lake City, has just completed one of the largest contracts ever let to a single concern. This was an order for 44,000 tons of clay sewer pipe and tile for the Millard County Drainage district. The new system comprises 900 miles of pipe and 5 to 20 inch tile, and the purchase price amounted to hundreds of thousands of dollars.

The Utah Fire Clay Co. was organized 18 years ago with a capital of $200,000 and a plant site of four acres. It now occupies 70 acres, and has increased its capital stock to $1,000,000. Practically every kind of clay product is turned out by this concern, among them being fire clay, flashed face brick and fire clay rough face brick. The entire state of Utah uses the ware made by the Utah Fire Clay Co., and large shipments are made thruout the intermountain country.

HOLDS SALESMEN'S CONFERENCE

25 salesmen of the Rutland (Vt.) Fire Clay Co. attended the semi-annual meeting of the salesmen with the firm at Hotel Bardwell, Rutland, December 30. Plans for the company's business for the year were discussed. Those present were H. J. Murphy, Portland, Me.; C. W. Thompson, Allentown, Pa.; G. L. Pierce, Brookline, Mass.; O. W. Griffiths, Pittsburgh, Pa.; C. W. Moulton, Boston, Mass.; C. A. Beard, Columbus, Ohio; F. E. Ready, Proctor, Vt.; G. W. Englehart, Chicago, Ill.; J. B. Nye, Schenectady, N. Y.; D. T. McCarron, East Liverpool, Ohio; G. S. Kellogg, New York; George H. Wood, Chicago; H. C. Bruhl, Ridgefield Park, N. J.; W. S. McCormick, Kansas City, Mo.; E. J. Vose, Saratoga, N. Y.; H. C. Ward, Indianapolis, Ind.; J. J. Hanrahan, P. G. Whitcomb and M. L. Beardsley, Burlington, Vt.

TREBLES CAPITAL STOCK

An increase in capital stock from $100,000 to $300,000 has been announced by the Heath Unit Tile Co. of Tacoma, Wash.

CLOSES DOWN UNTIL APRIL

Because winter time is a slack season for their products, the Suburban Brick Plant at Moundsville, W. Va., closed down during the holidays, and operations will be suspended until the first of April.

PERSONALS FROM CANADA

W. H. Freeborn, Brantford, has been re-elected alderman of that city.

A little daughter has come to the home of Mr. and Mrs. F. B. McFarran.

Mr. Bradford, of the Port Dover (Ont.) Brick & Tile Co., was a recent visitor to Toronto.

A. G. Dalzell, of the Vitrified Clay Pipe Publicity Bureau, Toronto, is in Vancouver, B. C.

Mrs. Dods, wife of Andrew Dods, president of the Ontario Sewer Pipe Co., Ltd., is seriously ill.

John McBean has resigned from the Milton Pressed Brick Co.'s sales force and his place has been taken by Mr. Glen.

Joseph Keele, director of the Ceramic Department, Mines Branch, Ottawa, is on an extended visit to New Zealand.

Jack Miner, tile manufacturer, Kingsville, Ont., is in great demand giving his lectures on the habits of birds and his experiences in connection with wild geese, and so forth. Mr. Miner has been elected honorary president of the Ontario Sportsmen's Game and Fish Protective Association.

WILL VISIT DON VALLEY BRICK WORKS

During the Canadian convention an opportunity will be afforded to visit the new modern clay handling plant and storage facilities at the Don Valley Brick Works.

* * *

The dissolution of Smyth & McDermott, brick manufacturers, Toronto, has been registered.

TORONTO BUILDS 3,000 BRICK HOUSES

Toronto spent about $30,000,000 last year in buildings. Of this amount $12,856,650 was spent on 2,908 brick houses; $301,800 on 121 brick rough cast houses; $2,500,000 on the new King Edward Hotel with brick front and terra cotta partitions.

DODS ELECTED UTILITY COMMISSIONER

Andrew Dods, president of the Ontario Sewer Pipe Co., was elected Utility Commissioner of Mimico, Ont., for two years on January 1, 1921, so did not have to undergo the excitement of an election this year.

* * *

THE BUILDING SITUATION

(*Continued from page* 123)

Common brick is selling locally at $20 a thousand in carload lots, with dealers asking $21 for the material on the job. A year ago, about $25 was being asked for first grade common in this section. In cargo lots, hollow tile, 4x12x12 inch, is priced at $150, or 15 cents a block; 8x12x12 inch stock is $250 a thousand; and 12x12x12 inch, $400, as against a former schedule of $160, $260 and $420, for the different sizes in order noted.

In order to stimulate construction to a maximum point, bricklayers at Cumberland, Md., have given notice to employers of a voluntary reduction in the former wage scale, effective at once. The rate, heretofore, has been $1.25 an hour; the new schedule will be $1.12½ an hour.

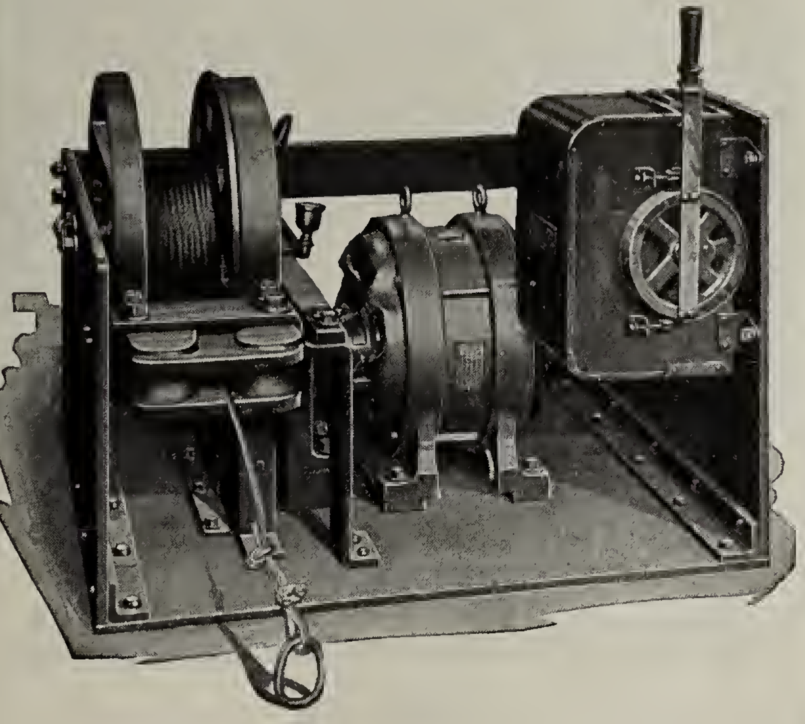
Increased Building Thruout Maryland

Practically every section of Maryland reports an increase in construction during the past year, and leading among the communities is Salisbury, with a total of $378,060, as compared with $196,820 in 1921. The entire county shows an advance of over $500,000 for the year's work. Woodberry, Havre de Grace, Westminster and Elkton are other districts showing important progress with good outlook for 1922 operations.

Year Starts Well in Pittsburgh

Indications of a good building season, Pittsburgh, Pa., apparent with the opening of the new year, are being born out by projects instituted and plans made by architects and builders since January 1. During the past two weeks, applications for permits to build, representing a total expenditure of $1,106,455 have been filed with the Pittsburgh bureau of building inspection.

In other lines besides building brick, the outlook is optimistic, according to reports. Bright prospects for 1922 are seen by Superintendent L. B. Rainey, of the Fallston Fire Clay Co., large manufacturers of flashed iron spot brick, and by B. E. Thompson, head of the Rochester Clay Products Co., at



WHY employ two or three men to push dryer cars from tunnels?

A GOODMAN
DRYER CAR PULLER

will do the work and pay for itself in about six months.

Details on request

Goodman Manufacturing Co.
48th to 49th Streets on Halsted
CHICAGO ILLINOIS

(6)

Beaver, Pa. Their opinions reflect the conditions in the brick manufacturing industry in the Beaver Valley.

Cleveland Building Will Continue

Building in 1922 in the Cleveland and northern Ohio district will go ahead. Many indications point to a bigger outlet for materials during the year just starting. The Building Exposition to be held at Cleveland, February 22 to March 4, is expected to have a considerable effect on building.

One of the large 1922 projects contemplated in Cleveland is the Union Trust Co. bank building, a 20-story structure on three streets, fronting 145 feet, 285 feet and 529 feet on each street.

One of the most encouraging factors introduced into the building situation is that by L. P. Ayres, vice-president of the Cleveland Trust Co., in a statement which sets forth that the building industry of the country can go ahead for the next ten years at 25 per cent. above normal before all the needs in building have been met. This figure is based upon a survey of the building situation in the Cleveland district.

Expect No Decline in Indianapolis Prices

Gradually, as in other markets, prices for building and paving brick, according to Indianapolis, Ind., dealers and factory representatives, are becoming stabilized. The demand is broadening and the prospects for the coming building year are bright. There are two factors, lower wage scales and lower freight rates, that will tend to influence the market to slightly lower levels, but general indications, the dealers say, lead to the opinion that prices are approaching an upgrade. As an offsetting influence to these factors, if building operations are increased the present output of factories will be taxed, which will tend to advance prices. Dealers are of the opinion that the latter will be the case. As cause they cite the fact that persons who are planning buildings for 1922 are attempting to place orders now for delivery in May and July. These orders are not being accepted, dealers say.

One dealer said that more brick were sold for residence buildings last year than any year since 1900. They expect even larger sales this year. The company represented by this dealer is one of the largest in the middle west. The output of this plant during the last year was 100 per cent. of capacity, it is said.

Chicago Labor Situation Unchanged

The Chicago Citizen's Committee still has full control of the building labor situation in Chicago. Altho the Building Trades Council threatened to call out all the trades on all the work going on in the city, unless non-union labor was taken off the jobs, the contractors stood pat, and as yet no strike has been called.

Much of the trouble has been laid at the door of the Carpenters' Union which has steadfastly refused to meet the terms of the Landis award. The flat refusal at first entered by this craft to take nothing less than the $1.25 per hour has, however, been modified somewhat and the union has now signified its willingness to go back to work for $1.10 per hour. This is ten cents more than granted under the Landis scale.

The combined factors of labor difficulties and seasonal inactivity tend to keep order books from becoming well filled, altho some face brick dealers are doing a fair business.

Louisville Concludes Good Year

The year 1921 closed with permits issued for new work in Louisville, Ky., costing $7,428,300 as against $6,986,260 in 1920. The increase while only $442,040 really represents an amount of work 25 per cent. greater than that sum according to Building Inspector Emil Korrell, who calls attention to the declining cost in material and labor during the year. Bank clearings during the year ran $1,556,022,712, as against $1,119,299,211, a loss of $356,723,501, or about 18 per cent. General commodity reductions were greater than that figure.

Increase Your Production and Decrease Operating Expenses

with an

Osgood 29–1 Yd.

Continuous Tread Steam Shovel

These machines are built for speed, power and economy. They are of heavy construction to handle the most severe work and contain many new and practical features of which the following are only a part—

Cast Steel Truck Frames interchangeable for Continuous Tread or Traction mountings.

Compact Tread Belts permit digging from either end and adjustable easily and quickly independently of each other.

Quick acting Power Steering controlled by operator in the cab.

Vertical Submerged Tube Type Boiler insures long life and affords uniform draft through all the tubes.

Horizontal Hoisting Engines reduce vibration and using steam expansively and economicallly save fuel and water.

These are only a few **REASONS** why **OSGOODS** are **BETTER**.

The Osgood Company

MARION, OHIO, U. S. A.

Several millions in new work is in sight, and it is believed that a good deal of this will be out shortly. Bids are to be opened on January 30, for new warehouses for the Belknap Hardware & Mfg. Co., to cost about $2,000,000, altho some of the contractors and supply men are afraid that the bids will be rejected as too high, as was the case last year.

Birmingham Contractors Look for Boom

There has been no material change in the price of brick and clay products in Birmingham, Ala., for several months. Beginning about February 1 it is expected that the demand for face and building brick and hollow tile and clay pipes will greatly increase, as many new buildings will be commenced after that date in the event present plans are carried out.

Among the large buildings now in the course of construction, and which will use a good many brick and hollow tile, are the Masonic Temple, the Birmingham Trust & Savings Bank, the Young Men's Hebrew Association, a new hotel at the corner of Fourth avenue and Twenty-fourth streets, and several large public school buildings. Besides these a number of smaller brick buildings are being erected.

Contractors say they expect one of the biggest building booms this coming spring that Birmingham has seen in several years. Owing to these opinions many of the brick and clay plants of Birmingham are being operated on almost full time.

Atlanta Establishes Record

Atlanta, Ga., established a record for the past eleven years in home building construction during 1921, a total of 1,286 permits being issued during the year, total valuation of the dwellings being close to $5,000,000. Of brick business buildings and public buildings erected during the year valuation aggregated about $3,000,000, and for churches and apartment houses exceeded $1,000,000. One feature of the year's building activity was the tremendous increase in brick home construction.

The Federal Reserve Bank of Atlanta states that building has been unusually active the past two or three months and that there is an excellent outlook for a general revival of activity during the early part of 1922, and continuing thruout the year.

Excessive freight rates are still acting as a retarding factor to the industry's more rapid advancement toward normalcy, but the concensus of opinion among the manufacturers is that there will be a general downward revision of rates within the next three or four months.

As a whole the outlook for the industry in the Atlanta section is fairly good, and certainly many times better than it was at this time last year.

San Francisco Faces Bricklayer Shortage

The shortage of bricklayers is worrying the brick manufacturers of San Francisco, Cal., more than the lack of business. There are several large office buildings to be erected early in the month of February and these contracts will keep all the available bricklayers busy for some eight or ten months to come.

Mr. Dennis of the McNear Brick Agency, of San Francisco, states that the Standard Oil Co. will start to lay brick, early in February, on their large 23 story office building, requiring 3,500,000 common brick and 700,000 face brick besides the laying of all the partition tile thruout the building.

The Matson Navigation Co.'s proposed new 15 story office building starts breaking ground early in February and will require 2,500,000 common brick besides the terra cotta and partition tile. This building will also take a large crew of bricklayers several months to complete.

The Federal Reserve Bank will start the laying of stone on their proposed new building, which must be backed up with brick, about the middle of February.

The Crocker Estate Co. proposes to erect a 25 to 30 story office building that will probably be under construction long before the above-mentioned buildings are completed.

Distance Is Eliminated

Where STANDARD CONVEYORS are used there is no such thing as distance.

The slow and costly methods of manual handling are abolished. Common labor costs are cut to the minimum and skilled laborers are kept busy. There is no more delay waiting for materials.

And remember this is all done by GRAVITY—the universal FREE power. Decide today to take advantage of it.

Write for complete information.

STANDARD CONVEYOR CO.
NORTH SAINT PAUL
MINNESOTA

PREMIUM COAL

Is the Most Adaptable Coal for Clay Products Manufacturers

PREMIUM COAL, when properly burned, will give the best results, because it has long flame, high heat, low ash and sulphur content, and by proper handling you have:

- No Overburned Tops
- No Underburned Bottoms
- Co-operation of Men
- Reduced Labor
- Reduced Coal Consumption
- High Quality and Minimum of Cracked and Waste Ware

PREMIUM COAL is a product of our PREMIUM mines in Southern Illinois; a section representative of the best production in the Middle West.

PREMIUM COAL has high heat unit, low ash, low sulphur and even combustion.

PREMIUM COAL, if properly burned, will produce results that will pass the most exacting tests.

Purchase Good Quality Fuel For Burning Your Ware

BUY PREMIUM COAL

**Daily Capacity
10,000 Tons**

BIG CREEK COALS, Inc.

OMAHA CHICAGO MINNEAPOLIS

BIG CREEK
for years has stood for
QUALITY *and* SERVICE

MACHINERY *and* EQUIPMENT

Descriptions of Machinery and Accessories and Detailed Announcements that Our Advertisers Believe Will Interest Our Readers

HAND STOKER MANUFACTURER OUTGROWS PRESENT QUARTERS

The CoKal Stoker Corporation, formerly located at 1029 N. Clark St., Chicago, will on February 1st, move its general sales office, engineering and service departments to their new location at 341 to 349 E. Ohio St., where they have taken more than double the space of their present quarters.

The CoKal Stoker Corporation, due to the service and engineering that it has rendered its clients, has developed a rapidly growing business which has made necessary this change and will be glad to welcome its many friends and clients at the new offices after February 1st.

* * *

THE DIESEL ENGINE AND CLAY PRODUCTS

The following article from the January issue of the "American Clay Magazine" is reprinted here because of the general interest the Diesel engine must have for all readers of "Brick and Clay Record":

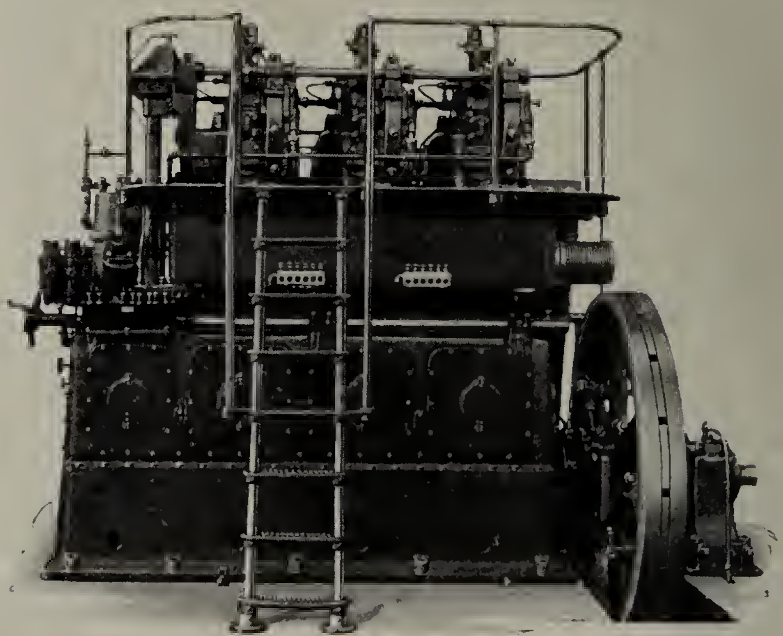
"You may have been so busy considering auger machines, cutting tables, pug mills, kilns and similar problems that you have overlooked a big opportunity for economy in production and in a place too, where heretofore you have experienced many troubles—the power plant. Steam is usually found in most clay plants, not because it is the best but more likely because it has been the custom. Steam in a clay plant seems to be generally accepted and from the small tea-kettle type of trouble maker the equipment and the troubles of the engine room range up and up into many horse powers and many trouble hours.

"Since clay plants are getting more and more into the class of big manufacturing institutions the need for better, cheaper and more easily handled power is becoming more and more recognized.

"In our Diesel Engine we have a power that will appeal to the thoughtful and the economically inclined. It furnishes relief from many troubles and many expenses besides shut downs for engine and boiler repairs which usually happen at the busiest time.

"It has been shown that a steam power plant, figured on a brick production basis, and with coal at $6 a ton, makes the cost of power per thousand brick just about an even 60 cents.

"As compared to this the Diesel engine, using fuel oil costing five cents gallon, will furnish power at 20 cents per thousand brick, a saving of forty cents per thousand brick.



The Hadfield-Penfield Steel Co., Bucyrus, Ohio, Will Be Glad to Send You Information Regarding This Diesel Engine.

"The saving does not stop at the power cost however but should include the ease of handling the fuel. Nothing to shovel out of the car and under the boiler. No ashes to remove, no flues to clean or steam connections to keep packed and there are many other advantages.

The Diesel engine proposition is one which the progressive clayworker should look into. It is an opportunity for economy and an equal opportunity for a trouble saving installation.

"The Hadfield-Penfield Diesel engines are superior in many features. They are built in both vertical and horizontal types to meet the varying needs of all power plant demands. We have catalogues describing and illustrating both types and will be pleased to take the matter of Diesel engines up with any inquirers."—*American Clay Magazine.*

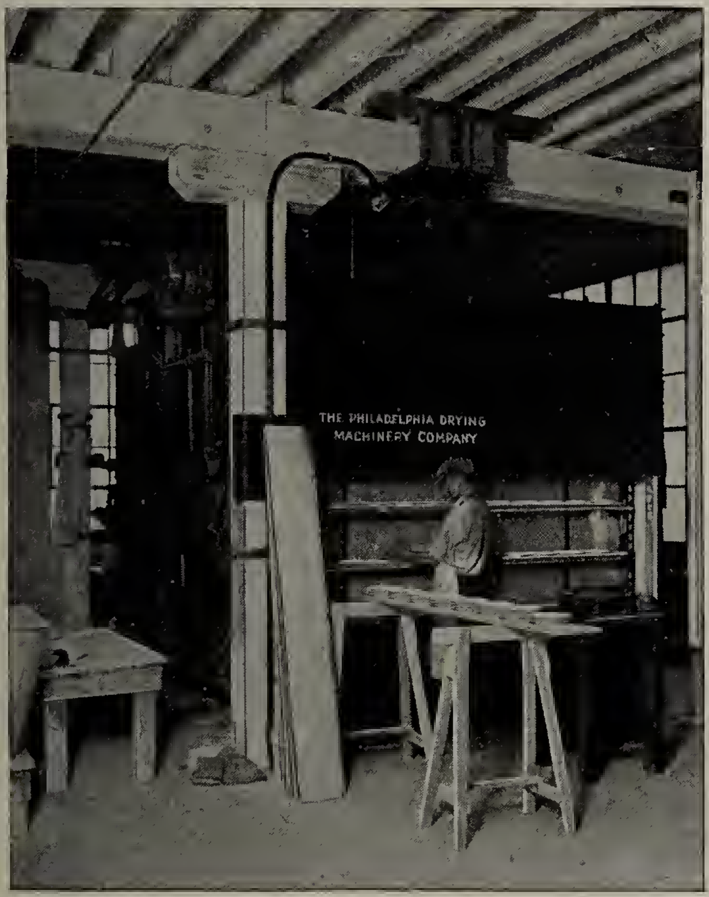
* * *

TO CORRECT AN ERROR

Under date of January 14, *Brick and Clay Record* received a letter from the Philadelphia Drying Machinery Co. reading in part as follows:

"In the January 10 issue you have used our new advertisement with the cut of our Stillage Dryer, which appeared in the December 27 issue. As you will see, when our copy speaks of drying dipped ware on the 'Hurricane' Automatic Mangle and illustrating a Stillage Dryer, it is a matter not to be overlooked. The clay and porcelain trade does not fail to notice such errors."

The Philadelphia Company were in no way responsible for the wrong type of dryer having been illustrated in the advertisement. We are confident that while undoubtedly the majority of our readers noticed the error, that from their own experience with printing problems, they at once knew where to place the blame. We apologize.



This is a "Hurricane" Automatic Mangle.

It so happens that the Philadelphia Drying Machinery Co. has just published a new folder describing the various types of "Hurricane" Ceramic Dryers, including the Automatic Stove Room for Pottery, the Automatic Mangle for Dipped Ware, and also their Tunnel Truck and Stillage Dryers.

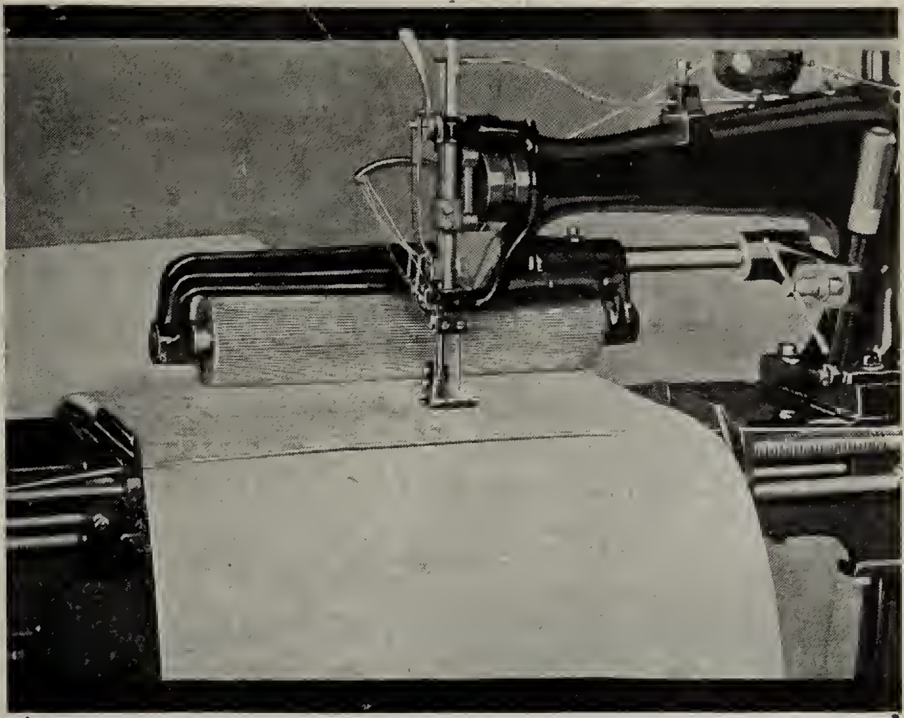
This folder describes the operation and performance of these machines in quite some detail, considerable space being devoted to the economies possible in time, floor space, steam power, etc.

Their address is Stokley Street above Westmoreland, Philadelphia, and they will gladly send you a copy of this circular.

* * *

The Armstrong Cork & Insulation Company has opened a new office in Milwaukee, Wis., at 1011 Majestic Building for the better service of its customers thruout eastern Wisconsin and the upper peninsula of Michigan. Hugh Krampe is in charge.

Also the Denver office of this company has been reinstated under the charge of Alex. Callow, at 1875 Gaylord Street.



Gandy Superiority Thread by Thread

THE stitching of a cotton duck belt is neither novel nor unusual. But like anything else, it must be done well here. At the Gandy factory the thread, the guide, the tension, the feed, are directed by expert operators who put Gandy Quality into every Gandy belt you buy.

On specially built machines, row after row with a special stitch, the sewing by Gandy methods results in a belt of great tensile strength, rugged durability and long wearing qualities.

In the brick and clay industry, for main drives or conveying, Gandy quality stands out supreme, giving years of trustworthy service long after other belts are gone.

Demand Gandy and get it. Look for the green edge, the Gandy name and the Gandy trade mark. It is your assurance of trustworthy service year after year.

THE GANDY BELTING CO.

MAIN OFFICE AND FACTORY
732 W. PRATT ST. - BALTIMORE, MD.
NEW YORK: 36 WARREN STREET
CHICAGO: 549 WEST WASHINGTON STREET

GANDY'S BELTING

GANDY
STITCHED COTTON DUCK
BELT

Trade Names Now in Use

on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.
ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.
ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.
ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.
ARKATEX—Southern Building Products Co., Little Rock, Ark.
ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.
ART-TEX—W. E. Loomis, Sherbrooke, P. Q.
ARTISTICO—Capital Clay Co., Des Moines, Ia.
ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.
ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.
BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.
BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.
BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.
BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.
BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.
BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.
CALEDONIAN—Fiske & Co., Inc., Boston and New York.
CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.
CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
CLAYTEX—Walton N. Cable, New York City.
CLAYTON MISSIONS—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
CLAYTON VELVETS—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
CLOISTER—Western Brick Co., Danville, Ill.
COLONIAL—Capital Clay Co., Des Moines, Ia.
CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.
CORALTONE—Harris Brick Co., Zanesville, O.
CORALROSE—Harris Brick Co., Zanesville, O.
COLUMBIA—Columbia Clay Co., Columbia, S. C.
CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.
CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.
CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.
CROWN—Green Fire Brick Co., A. P., Mexico, Mo.
DENISON—Mason City (Ia.) Brick & Tile Co.
DE LUXE—The Standard Brick Company, Crawfordsville, Ind.
DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.
DORIC—Western Brick Co., Danville, Ill.
DUNBAR—United Refractories Co., Uniontown, Pa.
EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.
E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.
ELKCO—Elk Fire Brick Co., St. Marys, Pa.
ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.
ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.
EMBOSTEX—Streator (Ill.) Brick Co.
EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo
EMPIRE—The Minor Fire Brick Company, Empire, Ohio.
EMPIRE—Western Brick Co., Danville, Ill
EVERHARD ANTIQUE—Everhard Co., Massillon, O.
EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.
EVERHARD DOUBLE-TEXTURE—Everhard Co. Massillon, O
EVERHARD FERN-LEAF—Everhard Co., Massillon, Ohio.
EVERLASTING—Mason City (Ia.) Brick & Tile Co
FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.
FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.
FISKLOCK—Fiske & Co., Inc., Boston and New York.
FRASERCLAY—Fraser Brick Co., Dallas, Texas.
F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.
F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.
F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.
FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG ROUGH TEXTURE — Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.
FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.
FULTONHAM-TEXTURE — Fultonham-Texture Brick Co., East Fultonham, Ohio.
GOTHIC—Western Brick Co., Danville, Ill.
GREENDALES—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O
GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.
GRID—Fiske & Co., Inc., Boston and New York.
HAWK-I-TEX—Capital Clay Co., Des Moines, Ia.
HAYES RUN—Hayes Run Fire Brick Co., Orviston, Pa.
HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston, Pa.
HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
HI-GRADE—Southwest Building Supply Co., Springfield, Mo
HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.
HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.
HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.
INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.
IRONCLAY—Iron Clay Brick Co., Columbus, O
IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.
KELSO—Hayes Run Fire Brick Co., Orviston, Pa.
KEYSTONE—Elk Fire Brick Co., St. Marys, Pa.
LADLE—The Zoar Fire Clay Company, Zoar, Ohio.
LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.
LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.
LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.
LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.
LOXALL—Exner, J. E., Coffeyville, Kan.
M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.
MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.
METALTEX—Columbia Clay Co., Columbia, S. C.
MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.
MINOR—The Minor Fire Brick Company, Empire, Ohio.
MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.
MOBRIQUE—Harris Brick Co., Zanesville, O.
MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.
MOSAIC—Western Brick Co., Danville, Ill.
NATIONAL—The National Fire Brick Company, Strasburg, Ohio.
NAVAJO—Kansas Buff Brick & Mfg. Co. Buffville, Kan.
NO. 1—J. H. Gautier & Co., Jersey City, N. J
NUVOGUE—Boone (Ia.) Brick, Tile & Pav Co.
OIL—J. H. Gautier & Co., Jersey City, N. J.
OLD HOMESTEAD—Burton-Townsend Co. Zanesville, Ohio.
OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.
OLEAN BLOCK—Sterling Brick Co., Olean N. Y
ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.
OXFORD—Southern Brick and Tile Company, Louisville, Ky.
PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.
PERSIAN SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
POS-TEX—Poston Brick Co., Springfield, Ill
POTOMAC-SAVAGE—Savage Mountain Fire Brick Co., Frostburg, Md.
"POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.
PROMENADE—Yingling-Martin Brick Co. Johnsonburg, Pa.
RAINBOW — Burton Townsend Co., The Zanesville, Ohio
RED ROCK RUFFS—Auburn Shale Brick Co. Auburn, Pa.
ROTEX—Elk Fire Brick Co., St. Marys, Pa. Gettysburg, Pa.
ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.
RUBYTEX—Columbia Clay Co., Columbia S. C.
RUFTEX—Thomas Moulding Brick Co., Chicago.
RUG—Hocking Valley Pro. Co., Columbus, O
RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.
ST. MARYS—Elk Fire Brick Co., St. Marys, Pa.
SAVAGE MOUNTAIN—Savage Mountain Fire Brick Co., Frostburg, Md.
SHALE-TEX—Streator (Ill.) Brick Co.
SIL-O-CEL—Celite Products Co., Chicago, Ill.
S. M.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. A.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. EXTRA—Savage Mountain Fire Brick Co., Frostburg, Md.
SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.
SPEEDWAY BLOCK—Alliance (O.) Clay Prod. Co.
STANDARD—Green Fire Brick Co., A. P., Mexico, Mo.
STANDARD—The National Fire Brick Company, Strasburg, Ohio.
TAPESTRY—Fiske & Co., Inc., Boston and New York.
TAVERN BRICK—Metropolitan Pav. Brick Co., Canton, O.
TEXTUR—Thomas Moulding Brick Co., Chicago, Ill.
TIFFANY—Thomas Moulding Brick Co., Chicago, Ill.
TORONTO—Toronto Fire Clay Co., Toronto, O.
TOWNSEND BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
TURKESTAN—Beaver Clay Mfg. Co., New Galilee, Pa.
TURKO—Rochester (Pa.) Clay Products Co.
UNITED--United Refractories Co., Uniontown, Pa.
U. R. CO.—United Refractories Co., Uniontown, Pa.
U-TEX—Fultonham-Texture Brick Co., East Fultonham, Ohio.
VERTEX—Beaver Clay Mfg. Co., New Galilee, Pa.
VITRI-CRAFT—Schuylkill Valley Vitrified Products Co., Oaks, Montgomery Co., Pa
VOLCANIC—Beaver Clay Mfg. Co., New Galilee, Pa.
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BRICK and CLAY RECORD

Established 1892. Now in its twenty-ninth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at
the Post Office, at Chicago, Ill., Under
the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other
Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland
Address all communications to home office

Chicago, February 7, 1922
Vol. 60 No. 3

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Much Needed Information on Clay Products Properties Now Nearly Completed. Let's Continue to Build Up Industry by Advertising

DURING the past two months annual conventions have been held by three national clay products associations supplying products in the building material field. Organizations representing the face brick, hollow tile and common brick industries have convened, and it is indeed inspiring to note the accomplishments reported.

Until only a few years ago, as an industry the clay products manufacturers were not recognized. Formerly, unanimity in purpose in serving the public was lacking. If an architect desired to know whether a steel girder or brick column would be preferable for a certain structural member, he could ascertain at once from a steel directory just how much weight a steel column of a certain size and length would support, but he sought in vain, as far as the brick manufacturer was concerned, as to the strength of the brick column.

Must Furnish Data to Architects

Crushing strength of brick or tile, elasticity of masonry walls, the fire protection offered by masonry walls, heat conductivity, absorption qualities and merits for sewer purposes, were properties which the architect and engineer desired to know. But all this information was lacking—was unavailable. Yet almost every other industry except the clay products industry had worked out complete working details, and had placed them in the hands of every architect and engineer in the country, so that with such information the architect and engineer were able to fabricate any kind of construction, knowing positively and definitely just what the material would stand and how it could be used.

If a builder desired information on comparative costs of various kinds of construction, all the clay products manufacturer could say was that burned clay construction was but very little more than frame or other forms of construction. But no definite information as to just how much the difference would approximate, was available. All that the builder could get from the producer was brick or hollow tile—no service. While other industries would help the builder to the extent of furnishing house plans, estimates and other aid, the clay product manufacturer in general offered nothing.

Clay Men Too Self-Sufficient

Manufacturers of cement and lumber had found the brick manufacturer so innocent, so child-like, so inoffensive, that they did not hesitate to enter his domain and help themselves to whatever they desired, knowing there would be no comeback. The clay products industry had too long felt itself self-sufficient. Just think of the egotism that pervaded the industry in its belief that its products were of such high grade that everybody knew it!

The clay products industry had too long been taking it for granted that the general public understood and fully appreciated the value of clay products as a building material. As a matter of fact, however, the general public had no such understanding, no such appreciation, and many of those who did have an appreciation had been led to believe that the use of clay products was prohibitive on account of high cost.

The voice of the carpenter-contractor was heard everywhere, preaching in favor of wood construction and a job for himself as both architect and builder. There are thousands of small towns in this country in which the carpenter-contractor is the chief oracle in all matters pertaining to building. In fact, in many of these towns there is not a single bricklayer to champion the cause of masonry construction. In the State of Ohio, alone, there are not more than 300 towns of more than 1,000 population.

Educate the Carpenter-Contractor

These carpenter-contractors are not to be too severely criticized for advocating wood construction. What has the clay products industry ever done to educate them and the general public as to the worth and superiority of burned clay construction? Practically nothing. Not only does the carpenter-contractor hold sway in the small town, but he is the chief mentor for all the country districts surrounding. If a farmer wants to build a new house, he consults first with the carpenter-contractor in his home town. He knows nothing about the superiority of a brick house over a frame house, and he has the idea, that is prevalent everywhere, that the cost of a brick or hollow tile house is prohibitive. Consequently, the clay products industry left a great field for business that was absolutely uncultivated.

Brick Masonry Discriminated Against

In the thousands of cities in this country there are building codes which vary almost as much in nature of construction requirements as there are different cities. Despite the fact that Government tests at the Bureau of Standards, at the arsenal in Watertown, N. Y., and tests which have been made at the University of Illinois, proved brick masonry construction considerably stronger than the best concrete walls, nearly every building code gives concrete credit for greater strength than brick masonry.

Not only is brick masonry discriminated against in this manner, but the factor of safety is altogether too high, with the result that brick structures become too costly by reason of the excess construction required. This condition is wasteful and unnecessary. The structural requirements of hollow building tile have also been too restrictive. But there were no organizations that could champion the rights of the clay product manufacturer.

At the conventions of the three national associations which were held during these past two months, much improvement in the conditions enumerated above has been noted. Many of the evils have been and are being rectified. Results from research and investigations have been brought before the attention of the proper parties, and changes have been made which have been to the advantage of brick and tile. House plans and comparative costs, which have been published in recent years, have done a great deal to bring back the market for clay products. After having made the splendid progress already noted it would be a serious mistake to stop now. There never has been a greater need and a riper time for burned clayware producers to spend money to perpetuate their business by giving the public the service it desires, than right now.

Keep Everlastingly at It

The demand for construction is considerable, and the industry should continue to hold ground and not lose the advantage of the momentum that has already been given to its progress. Spasmodic advertising does not pay. It is the constant dripping of water that wears away the stone; so it is the constant reiterating in the press of the country that clay products are superior for building purposes that will wear away the prejudice of the average man.

There will always be manufacturers who will refuse to join an association and render the public a service. However, there is no reason why an industry should stop because of this. If progress should stop for absolute unanimity by all, there would never be any progress, because there are always those who want to profit by the labors of others; they are the parasites on the general public.

Clay products have been known since time immemorial, but that has been one of the difficulties with the clay products manufacturer. He has taken it for granted that because we have always had clay products that everybody appreciates the strength, fire resistance, comfort, utility, beauty and other values of that material. However, if you mention construction, does the public think of brick and hollow tile? Yet if you mention soap, does not at once the name Ivory occur to you? Or gum—Wrigley's? Tires—Silvertown Cords? Clothes—Hart, Schaffner & Marx? Collars—Arrow and so forth. What has been done during the past few years is remarkable, but it is small compared to what will be accomplished for the clay products manufacturer if he will but carry on.

The situation may be compared to the building of a large skyscraper. At first a fence is thrown up and the debris cleared away, and foundation prepared. It is a long time before the passersby see anything but the fence. Finally, after the groundwork has been prepared and the foundation built, the building begins to rise and shape itself. The work that has been done by the clay products associations thus far has been the unnoticed groundwork, upon which the future activities can be built, and which will enable the industry to give the public real facts and instructive service that will finish and round out the educational campaign.

Today the best things in almost every line are those most advertised. Why should this not also be true of brick and tile?

* * *

Are You Too Busy to Learn?

SOMEHOW OR OTHER, some of us often forget a very simple and basic principle. We forget that time moves on, and that with time there is the development of science and industry.

Some of Those Papers

which arroused most interest at the recent conventions will be published together with other important matters in

Next Issue

An example of what it means to keep abreast of the times is furnished by an interesting story of a man in a certain town in Ohio, who visited his brother John living in a small community some 50 miles away. John was manager and part owner of a brick plant, located in a settlement among the hills on the outskirts of a small city. He had been making brick in this section for many years, and his ledger always showed a fair profit at the end of the year.

In discussing the brick manufacturing business, the brother, whose name was George, asked John about some new equipment and methods which had recently been introduced in the industry, and which were being used on a plant in his city, the manager of which he was well acquainted with. John knew nothing of this equipment, much to his brother's astonishment.

When asked if his trade paper had not discussed this new equipment, John said that he did not read his trade paper, since he considered it a waste of time, and felt that he knew how to run his own business without anybody's help. He had done so for 15 years!

The business should not have required at the most more than eight hours of time. Yet this man frankly stated that he had no time to search thru a trade paper for something that might interest him.

In the chat with his brother, the brick plant operator admitted that the plants farther away were coming into his territory with brick at lower prices. Business was not coming in the way it should, and his costs had not been lowered so that he could meet the prices quoted. He was inclined to call his competitors "price cutters" who were selling brick below cost and ruining his market. He cussed the brick manufacturing game in general and condemned the friend his brother mentioned, who, he said, was one of the chief price cutters. The brother, however, told John he had seen the statement of his friend's business condition, and was surprised to learn the great amount of profit he was making, and was disappointed to learn that his worthy kinship was not enjoying such profits.

This situation is not a singular one, since one only needs to make a tour of inspection around the country, and he will find many producers in a similar category. An examination around the plant where the "wise one" holds forth will convince you that he is fooling no one but himself regarding the store of his knowledge and his ability to apply it in mastering the problems that arise daily on the average plant.

"Pride goeth before destruction and a haughty spirit before a fall," comes from the pen of Solomon, who has an age-old reputation for wisdom. This proverb might well be taken to heart by those who boast they have nothing to learn. There is another saying of ancient vintage, the sense of which is that a man is never too old to acquire knowledge.

It is only by tireless study of the experiences of others in your trade or calling, and a working out of these experiences for yourself, that you can excel or even succeed in any line of endeavor. Read and learn from others, for this world is filled with millions of capable men who are constantly developing new ideas and methods. The way to conserve time is to take the time to learn how.

Industry Shows Great Unity of Purpose

St. Louis Sees Greatest Gathering of Common Brick Manufacturers Ever Held—Delegates Enthusiastic Over Future of Industry Under Guidance of Association

UNANIMITY OF PURPOSE—Cooperative activity toward the enlightenment of the public so that the American people may know the facts—the truth about the world's best building material and in this way accomplishing a two-fold purpose, a service to the public and a benefit to the industry—was the dominating thought pervading the membership of the Common Brick Manufacturers' Association, as disclosed at the third annual meeting held at the Hotel Statler, St. Louis, Mo.

One could not help but be inspired and enthused as to the future of the industry after witnessing the interest manifested at the sessions, which were always fully attended by the majority of the 250 persons who were in attendance, of which approximately 175 were bona fide brick manufacturers, 50 machinery and equipment men, and 25 persons interested in various ways in the activities of the association.

"Mystery No. 3" was revealed as a financial scheme to help the home builder and to increase the use of brick in residence construction. This, together with the excellent results some communities have obtained with the Ideal wall construction, the successful local advertising campaigns, the investigation of building codes, the study of fire resistance of common brick curtain walls, the research of plant problems and the good prospects for 1922, as well as the excellent returns already received from the general advertising campaign, were the salient points discussed at this year's convention.

Mayor Gives Hearty Welcome

On Monday, January 30, at two P. M., the opening session was addressed by Mayor Henry W. Kiel, of St. Louis, who welcomed the delegates in a whole-hearted manner. Mayor Kiel has devoted practically all his life to bricklaying and brick contracting, and stated that he was glad to have the opportunity to welcome the manufacturers of a product which meant to a community, homes that were substantial, beautiful, comfortable, warm in winter and cool in summer, and fireproof. He announced that St. Louis required, according to its building code, brick construction and 13-inch walls.

William N. Cary of Albany, N. Y., who replied, congratulated St. Louis upon its building code and otherwise responded to the splendid welcome of the Mayor.

Possessing the power of oratory, the forcefulness of language and the eloquence that but very few manufacturers of brick have, Charles H. Bryan, the active president of the association, delivered his address, which is printed in full herewith.

President Bryan's Address

"This is a time when the business man, be he manufacturer or seller, or both, must look two ways at the same time. That may seem paradoxical; it may seem to invite both physical and mental astigmatism, but it seems to me it is well worth a trial. We have, during the past year, endured some obstacles, some difficulties, but these have not been confined to our enterprise. Such conditions were so general that even the Internal Revenue Department of this great Government now finds the return from Income and Excess Profits Tax an uncertain and almost unknown quantity.

In Prospective

"We are looking forward into this year with courage, with renewed confidence, notwithstanding the fact that the clouds are not wholly dispersed, but the sun is shining behind and thru them. If you look into dull and seemingly dry statistics, you will see that our country's exports, formerly of consequence, have, during the last year, faded into inconsequential figures. The factories formerly contributing to such exports, are now feeling that loss. The farmer, too, has had his troubles, and his products, the result of much expenditure of both muscle and money, have lost their former market value, and thus his buying power is greatly reduced.

"These conditions should not be overlooked; when we gleefully read the marriage totals in this glorious country, in our vivid imagination we see a new home follow each marriage, constructed, of course, with the liberal use of our brick.

CHARLES BRYAN

"In other words, let us see both sides of the prospective pathway, the flowers, the weeds, and even the mud, for these are all parts and parcels of a business existence. Indeed, are they not human nature's daily food?

"Now to be quite practical, let me call the 'flowers' a fair profit; the 'weeds' bad accounts, and the 'mud' the waste which obtains in every factory and in every business office,

A Part of the Attendance at the Common Brick Manufacturers' Association Banquet at the Convention in St. Louis.

even tho we think ours are free from such unwelcome neighbors.

Flowers of Profit

"It behooves us while here to devise ways and means to so conduct our business that the flowers shall bloom in abundance and radiance and with a lasting perfume which will suffice for the encroachments of disease or disaster, and assurance against want in declining years, thereby giving to each a sense of independence. See to it that you have a fair abundance of flowers.

Weeds

"It is needless for me to enumerate what havoc weeds play with the growth of sweet, fragrant flowers. May each one of us swiftly, and with grim determination, remove from our business forever the weeds that impair our progress.

Mud or Waste

"From this last analysis of our business, each individual should have a better understanding of waste and lost motion, that which chokes the growth of flowers or profits. It it high time that we as individuals give ourselves a careful inspection, and if personally found clear, then on down the line from superintendent to cartboy, to find the leak and stop it.

"This convention affords the officers an opportunity to give an account of their stewardship. The guiding hand of our organization over the tempestuous commercial sea, as you well know, is our most efficient secretary, Ralph P. Stoddard. To him we owe a deep debt of appreciation for his untiring efforts in behalf of our association, and even as individuals.

"It might sound good for me, as president, to go into details as to what has been accomplished by our organization, but all dates and facts would have to be furnished by the secretary, therefore, let us get the facts from him as secretary, and not from me as president. I have, however, made trips in the interest of our association, and have, by correspondence and otherwise, kept in touch with the workings of same.

Urges More Cooperation With Secretary

"I take this opportunity to express my appreciation of the courteous, efficient and business-like manner in which Mr. Stoddard has conducted the affairs of the association. I say courteous: I often wonder how our secretary can keep so even a demeanor when the general membership gives him more concern than other activities. I refer to the members who do not answer correspondence—to the one who is lax in the payment of his dues. All these have a tendency to retard the activities of your secretary. As a business proposition we are paying a salary of sufficient amount to have a secretary-manager of the best brick association in America, and we should not make him a collector of accounts. No one should criticize without offering a remedy. If asked for some information by the secretary, write yes, no, or something on the letter and return it, at least let him know you have received the letter. As to dues, pay promptly; that is, if you can, or remit to apply on account. Let the officers know you are mindful of the fact that it takes money to run an organization. If each of us will do this, we will relieve him of the most embarrassing part of his duties and at the same time give him an opportunity to do bigger things for the association. As president, may I ask you to do all in your power this year to help the secretary? Do something for yourself.

Convention

"I believe it is meet and proper that we should get together once a year, and as I have said, afford the officers an opportunity to give an account of their stewardship, and that our membership as a whole may get into action and offer constructive criticism. However, I want you to realize that the workings of our association do not end with the closing of this convention. I would recommend that all conventions be thoroly business—no flowers or gold braid—and that no effort be expended to get star speakers for the banquet. That a get-together dinner be held with and by our own membership, and this association should not tolerate the expenditure of any money by local brick manufacturers for the purpose of entertainment. The place of meeting to be determined after a careful survey as to where we can do the most good in the interest of our commodity.

Machinery and Equipment Manufacturers

"To the representatives of these industries, we extend a hearty welcome as our guests. We will not permit you to participate in any way in the expense of our convention, but are glad of the opportunity to meet you personally. We shall exact from you fair treatment, so that no mud or waste may accumulate in our enterprise, as a result of our business relations. On behalf of the members of our association I extend to you a most loyal welcome.

Board of Directors and Ex-Committeemen

"To the Board of Directors and the Ex-Committeemen I wish to express my deep appreciation of the most loyal support extended to me as president. This association is to be congratulated upon the personnel of the Board, and the deep interest they have taken in your affairs at a personal sacrifice to them. I bespeak for the next president that same unselfish, loyal support.

THE NATION'S BUSINESS
KEITH'S MAGAZINE ON HOME BUILDING
BUILDING SUPPLY NEWS
Farm Life
POPULAR MECHANICS
SUCCESSFUL FARMING
The Farm Journal
CAPPER'S WEEKLY
NATIONAL REAL ESTATE JOURNAL
THE CLAY-WORKER
THE ARCHITECTURAL FORUM
We Advertised in These Journals in 1921
In 1921 your advertising reached a total magazine and trade journal circulation of 6,008,140 and a total newspaper circulation of 8,395,338 — Grand Total 14,403,478
THE JOURNAL OF THE AMERICAN INSTITUTE OF ARCHITECTS
National Builder
The Architectural Record
The PERMANENT BUILDER
AMERICAN BUILDER
BRICK AND CLAY RECORD
Building Age
House & Garden
THE LADIES' HOME JOURNAL
The HOUSE BEAUTIFUL
ZANE GREY'S The Call of the Canyon

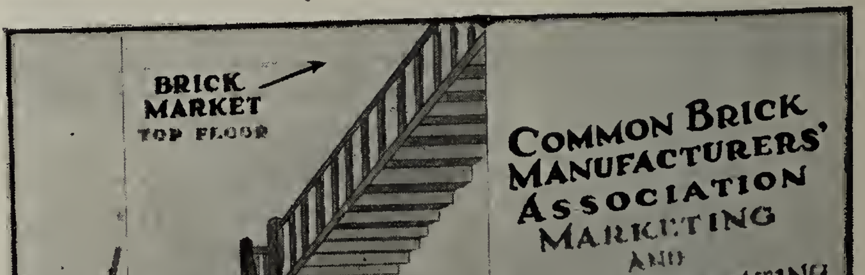
1921 Advertising by the C. B. M. A. in the Above Journals and Magazines Reached a Circulation of 6,008,140.

"In closing, may I ask each of you to grasp every opportunity. It is not my purpose to admonish you, that opportunity knocks but once and never returns. It is the poor, misguided soul who imagines that opportunity has knocked at his door and quietly and quickly gone to his more prosperous competitor, to return no more. To this member of our association do I with all eagerness and sincerity of purpose, cry out to awake! The time is at hand, it is ever present! Opportunity is knocking all the time. The alarm that awakes you in the morning is effective if you arise at once and go about your daily tasks; if you turn a deaf ear it has no purpose. The alarm has performed, but you have slumbered on. It will awaken you the next morning, however. Just so with opportunity, it is knocking all the time. Be on the watch; arise to the occasion. This association is your alarm clock. Mr. Stoddard is careful that the alarm is well oiled and wound. Hearken to the voice that is ever pleading with you to make your business more successful, to the effect that you may keep as nearly as possible the cost of your commodity; that there is and always will be an overhead charge and that you are entitled to a reasonable profit, or flowers, that the fragrance may bring comfort in old age. Watch! Be always ready to grasp opportunity. When once laid hold of, you will find no resistance whatever, and the only question in your mind will be, why have I waited so long to open the door after hearing the gentle, ever-pleading voice of opportunity to do something for myself that my business may be more successful; that I may see my competitor with a more friendly eye; that at all times I may maintain so high a standard that it will warrant my membership in the best brick association in America. That is taking our business thru a process of evolution to a higher standard of business ethics."

Discusses Economic Conditions

One of the best messages given to the delegates, a talk which elevated the spirits of every man present and made him look into the future with greater hope and optimism, was that by Josiah Kirby of the Cleveland Discount Co., a young man with considerable knowledge on economic subjects. Briefly, he stated that prosperity comprises a period of borrowing, extending credit, or inflation. Everyone is affected by deflation, which is simply a restraint of credit. Four billion dollars worth of goods are now lying idle in warehouses in all parts of the world, simply because of a lack of credit.

From the period of extravagance the public went to the opposite extreme of a buying strike. A garment—if it costs $19 and the buyer will not purchase it until it comes down to 30 cents—will eventually be caused to come down to that exact price, tho this price be unjustified. Thus the buying strike is bound to bring things down, but it creates an unhealthful condition in business.


BRICK MARKET TOP FLOOR
COMMON BRICK MANUFACTURERS' ASSOCIATION MARKETING AND BUSINESS-CREATING SERVICE
SOME CLIMB!
I'VE A DARN GOOD NOTION TO TAKE IT
I'M GOIN' TO LET THE BUSINESS COME TO ME
THE SLOW, UNPROFITABLE WAY
THE ASSOCIATION "LIFT"
YOU SAID SOMETHING
THIS SURE BEATS WALKIN'
GOING UP!
COMMON BRICK MANUFACTURERS' ASSOCIATION
THE QUICK AND PROFITABLE WAY
THE NICHOLS MOORE COMPANY

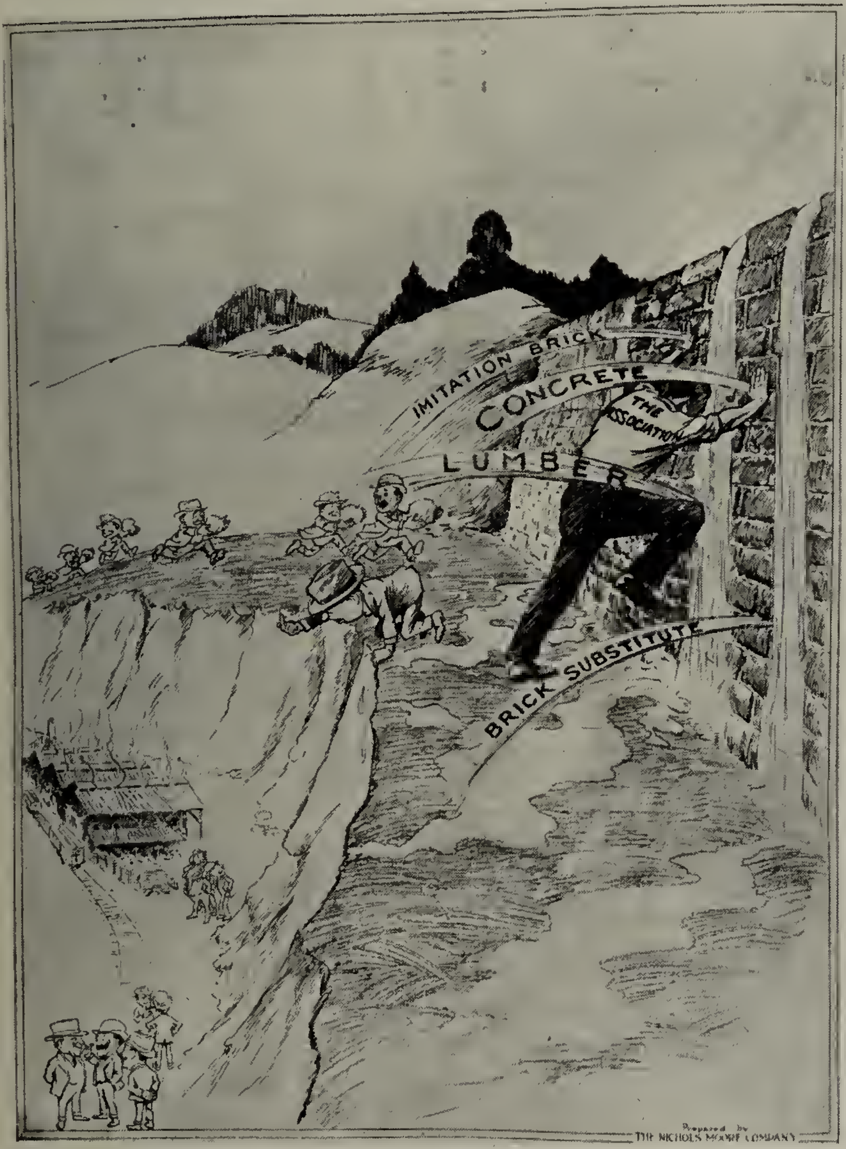
A Splendid Cartoon Giving an Excellent Message in an Illustrative Way to Common Brick Manufacturers.

Altho in general we have had our deflation, there will be further readjustment in some commodities.

Predicts Easier Money

Mr. Kirby predicted easier money for 1922; in fact he stated that money would be easier than for the past 25 years, with the possible exception of part of 1916. Moreover, there never was a time in the history of the world when money was easy that people did not borrow and buy. Furthermore, never has the world been so short of houses. These facts, together with a greater trend in building, are indicative of a big year in building, and it is predicted that 1922 will be the largest year in the history of the United States for the construction of homes, apartments and public buildings. The Cleveland Discount Co. in 1921 loaned $22,000,000 for construction. In 1922 Mr. Kirby stated $40,000,000 will be loaned for construction, and he added that $39,000,000 of this amount would be for brick construction.

Never will we turn back to 1914 prices, Mr. Kirby said. He gave as reasons the fact that this country owes 23 billion dollars. Secondly, freight rates are considerably higher. They will be lower than they are at present, but the readjustment will be slow and on a different basis than pre-war rates. As a third point, Mr. Kirby stated that too much gold is owned by this country. Gold is the basis of credit and it means easy credit, but also gives a lower value for the dollar. A fourth point was made that inasmuch as commodity prices will be higher, labor must be better paid, which is an obvious reason for an impossible return to old prices.

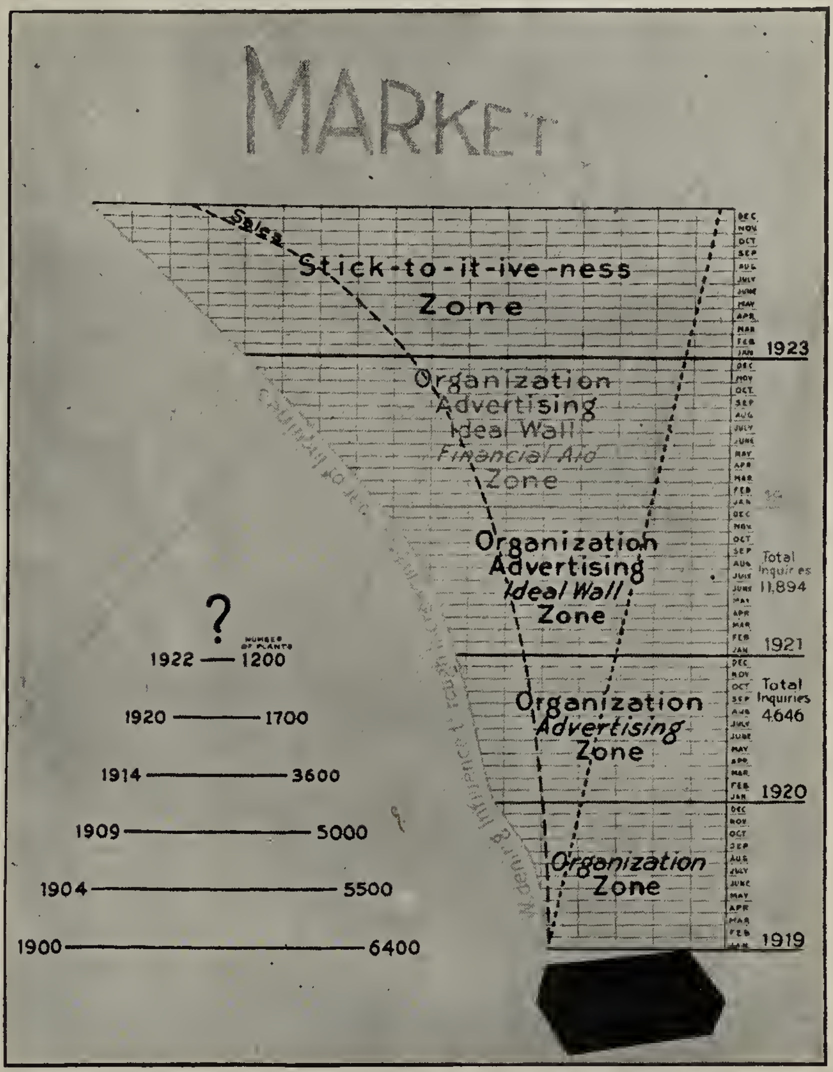


Picturing the Need of the Common Brick industry for a United Front Against Competitive Materials

Mr. Kirby pointed out the immense resources of this country, and stated that what we needed most was an ambition to work hard and efficiently, and with a spirit of optimism.

Fire Tests on Brick Masonry

Professor S. H. Ingberg, of the U. S. Bureau of Standards, presented some data on fire tests made in the laboratories of the Bureau of Standards on brick masonry. This talk was illustrated by lantern slides and the tests included masonry construction of the following: surface clay brick, shale brick, concrete brick, sand-lime brick and the Ideal wall construction. Fire tests were made subjecting a unit wall of large size to the intense heat of a furnace which reached a temperature of 2,200 deg. F. at the end of six hours. Data was taken as to the results of each experiment. Thus far the clay brick tests have been very favorable and it is expected that the program will be completed by July 1, and the data available sometime thereafter.



The Straight Dotted Line Shows the Steady Declining Market for Common Brick Interpolated for Future Years if There Was No Organization to Increase the Market, Such as the C. B. M. A.

The Bureau of Standards also made an investigation and tabulated the thickness of brick walls required in the building codes of various cities for one, two, three and four-story structures. A great variance was shown, and the need for standardization pointed out. As a result of the investigation it is expected that a more standardized building code will result.

Mystery No. 3

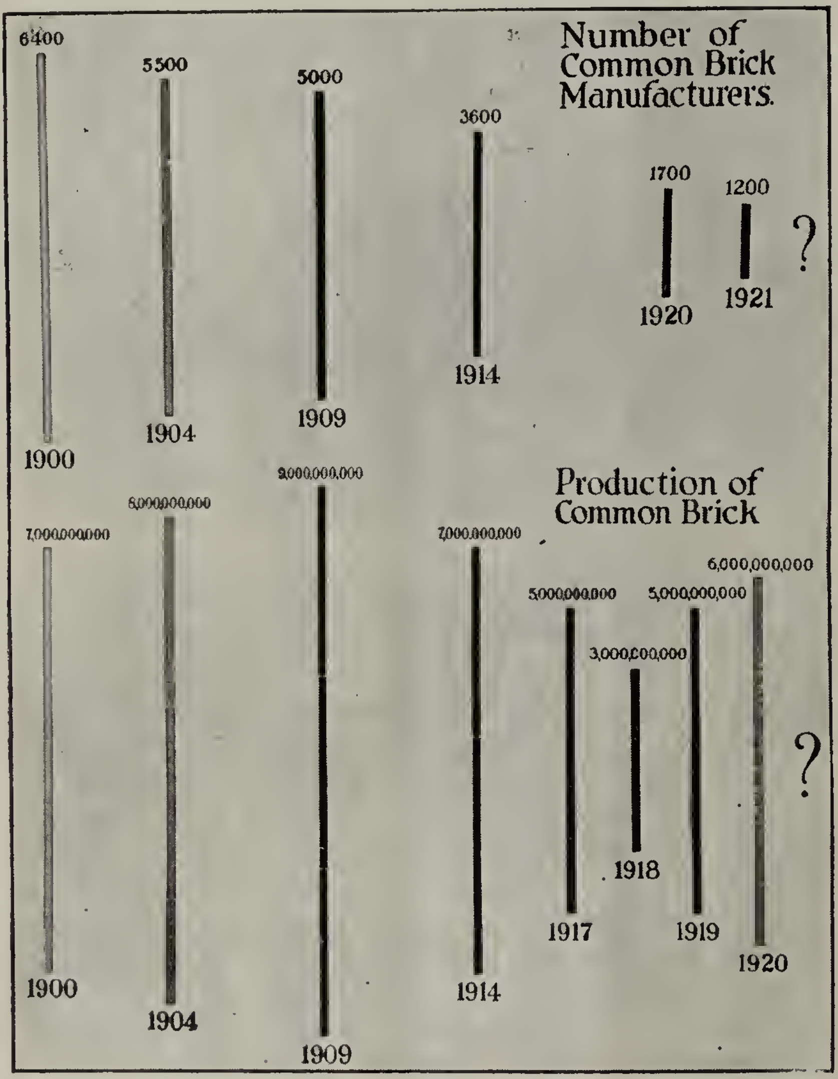
At this point Secretary Stoddard introduced "Mystery No. 3" to the delegates. He pointed out that many obstacles were thrown in the way of the prospective home builder, and that any aid that would reduce the number of obstacles, and that would make it easier for the individual to build, would be of greater advantage to manufacturers supplying materials for construction purposes. One of the obstacles is financial aid. Hence any agency that would offer financial aid to the home builder would receive favorable attention. Thus Secretary Stoddard proposed that the association establish a financial company, stock to be taken by the membership and others who might be interested, and second mortgages purchased on brick homes. This would not be worked for profit, and would enable the builder to borrow on lower rates and would facilitate home building. The mortgages would be guaranteed and bonds issued on the second mortgages to liquidate and make possible the use of the capital over again. In this way the missing link which is often a small amount of second mortgage money would be supplied to the home builder, and would enable much construction that is now held back for this one simple reason.

Secretary Stoddard stated that the plan had not been worked out in detail, and recommended that a committee be appointed to study the proposition more fully, the findings then being reported to the association. He pointed out the advertising value that would accrue from such a plan if it could be stated by the brick manufacturer, "We will finance your home."

Increasing One's Efficiency

On Tuesday, E. Elmo Martin gave a blackboard talk on "How to Handle a Day's Work." His talk was really a "pep" talk and was an inducement to bring in greater efficiency in a man's daily routine work, and suggested plans whereby a man might facilitate his work and increase his daily capacity.

A very good point made by Mr. Martin was the value of giving men authority and an opportunity to use their own initiative. This, he pointed out, often results in greater efficiency and better employe relationship.



The Upper Section of These Graphs Shows the Constant Reduction in Number of Plant Operators; the Lower Section Shows the Increase in Production Since 1918.

Maurice B. Greenough, secretary of the National Paving Brick Manufacturers' Association, outlined the progress that had been made thus far in the research work which is being carried on by the major clay products associations. He urged that the industry continue its research and not stop and lose the benefits that have been thus far obtained. He stated that the surface had only been scratched and that there was a great field of study for better work.

R. T. Stull of the Bureau of Mines, who is in charge of the research, reported on results thus far obtained, and revealed that investigations showed already a saving of 10 to 15 per cent. in fuel with present plant equipment.

Ross C. Purdy, who followed Mr. Stull, urged the cooperation of the Common Brick Manufacturers' Association in the work being done by the American Ceramic Society, and expressed the wish that a good representation of the membership would be present at the sessions of the heavy clay products division during the annual meeting of the American Ceramic Society which was to be held also at the Hotel Statler during the week of February 27.

Does Local Advertising Pay?

A session on the subject of "Does Local Advertising Pay?" created unusual interest. George H. Clippert, of Detroit, described how manufacturers in Detroit banded together, did some investigative work, and advertised, thereby increasing their market considerably. The result of their campaign proved to him conclusively that it paid to advertise common brick.

Mr. Clippert told of an experimental house he was having built in Detroit of the Ideal wall construction, of the design known as the Aztec, on page 46 of the booklet published by the Common Brick Manufacturers' Association entitled "Brick For the Average Man's Home." This building, which was built with a 12-inch brick basement and eight-inch Ideal wall was let at a contract price of $3,500, and compares very favorably with any type of house construction.

Charles H. Bryan substantiated Mr. Clippert's remarks, and states that each manufacturer in Detroit contributed ten cents a thousand, six cents of which was sent to the national association, and the remainder used to take newspaper space. A detailed description was given and some of the direct benefits outlined.

Los Angeles Now A Brick Town

L. S. Collins next read a paper he had prepared, and told of the origination of the Ideal wall construction and how brick houses, which were formerly practically unheard of in Los Angeles, are now very common, some 500 of them having been built within the last year as a direct result of an active campaign carried on by Los Angeles brick men.

A letter was read which was written by Fritz Salmen, showing the results of an advertising campaign in New Orleans, and figures were given to show the increased number of inquiries each year which were directly traceable to local advertising.

J. A. Pugh stated that merely believing that common brick is a basic building material is not getting anywhere. The public must be told and shown. The result of moving office and display rooms to a ground floor location in the heart of the retail section was described. Passersby were attracted by the window display and an increased use of brick resulted from this move.

Brick Advertised On Billboard

C. W. King, secretary of the Connecticut Brick Manufacturers' Association, told of the campaign being carried on by Connecticut manufacturers. As a result of the efforts of this association, the Ideal wall was introduced in the town, and recently a sign board installed on the highway 12 feet high by 30 feet long. This advertising sign was built at a cost of $196, much lower than bids received from several of the companies furnishing such signs. Other signs are to be erected on the prominent highways and arteries leading to Hartford, and it is felt that this will be a very effective means of creating interest in brick construction.

This association was very active in proving the fallacies of newspaper and magazine write-ups which during the past year have endeavored to condemn the high cost of brick and insinuate profiteering on the part of brick manufacturers.

Built Ideal Wall Houses

One of the most interesting narratives told at this session was that given by L. L. Stephenson of Lovick, Ala., who formerly was a bricklayer. Mr. Stephenson did not take to the Ideal wall construction at first, but after receiving considerable literature from the C. B. M. A., was induced to experiment and built an Ideal wall brick house on a lot on the main highway leading out of Birmingham. The structure created such interest and was in great demand, and was the first of a series of houses of similar construction built by him.

The Value of Widely Advertised Trade Marks Is Shown by This Chart. The Products Associated with the Above Trade Marks Are Immediately Recognized. The C. B. M. A. Hopes to Have Its Trade Mark Equally Well Nationally Known.

Mr. Stephenson believes strongly in getting the bricklayer's interest, and urging him to advertise. Much good can come out of this, he believes.

E. C. Roberts explained the newspaper campaign conducted by the Cleveland Builders Supply & Brick Co., and told of bids that were received by contractors on a certain house plan and these plans published together with a photograph of the house and the cost of the bids for various types of construction. In this manner, Cleveland, which was formerly a town of which 97 per cent. of the contractors were carpenter contractors, was converted so that more of the contractors are now interested and favorable to brick construction.

Need for Change in Building Code

William Carver, architect for the national association, delivered a splendid paper showing the gross injustice being done brick in the various building codes all over the country, because facts were not available as to the properties of common brick. He pointed out in a very able manner the need for certain tests and the advisability of building code changes in nearly all cities as to strength requirements of the brick wall. Too high a factor of safety which is now required unfairly increases the cost of masonry construction.

D. Knickerbacker Boyd, consulting architect, Philadelphia, and a brick enthusiast, outlined very briefly the work he is doing on behalf of the brick manufacturer. Mr. Boyd is rendering a wonderful service to the brick manufacturer and should be accorded considerable praise for his splendid efforts. He is the point of contact between Mr. Hoover, secretary of the Department of Commerce, and the common brick industry, and is seeing that common brick is getting a fair deal in all considerations into which that product enters.

Mr. Stoddard again addressed the association on Wednesday, and continued his message of what has been done for the industry by the association thus far, and by the use of charts and illustrations graphically described conditions in the industry and other points which are self-explanatory.

Use Trademark

Mr. Stoddard urged the use of the trademark, not so much as a stamp on the product, but as an imprint or sign on all literature, letterheads, and so forth, of members of the association. He hoped that the appropriation might be increased in the future and that it might be somewhere comparable to that of other nationally advertised products whose use has increased by virtue of the extensive campaigns carried on by such concerns. 452,000 pieces of literature have been sent out by the C. B. M. A. during its short existence, which is a remarkable showing for the industry. This literature is continually bringing in returns.

On Wednesday a resolution was introduced by B. F. Weber, addressed to the nation's Chief Executive and to governors of the various states, as well as senators and representatives, urging the discontinuance of prison-made brick. The resolution was complete in detail and showed the injustice of the manufacture of this product. A resolution was also introduced by Mr. Obermyer, recognizing the splendid work of Mr. Stoddard and his staff, and was passed as an appreciation of the noteworthy service rendered by the secretary.

New Officers

For the board of directors whose three-year term expired at this meeting the following men were elected: John P. Cahoon, Salt Lake City, Utah; Charles Francis, Muskogee, Okla.; W. N. Carey, Albany, N. Y.; T. L. Herbert, Nashville, Tenn.; L. S. Collins, Los Angeles, Cal.; J. A. Pugh, Norfolk, Va.; and T. E. Wilson, Pittsburgh, Pa.

Because of his able stewardship during the past year, his progressiveness and the high esteem that the association holds for him, Charles H. Bryan was re-elected president of the association by the directors. Other officers elected were: Treasurer, Ernest S. Barkwill; vice-presidents, William N. Carey, Fritz Salmen, John P. Cahoon and B. F. Weber. Thus the officers remain the same as last year with the exception of B. F. Weber, of Chicago, who succeeded William K. Hammond, of New York, as vice-president.

An interesting incident occurred during the course of the last session, at which time Anthony Ittner, who was 84 years old his last birthday, was called upon to give a brief address, in which he announced that 69 years ago he was an off-bearer in a brick plant and was the first brick manufacturer in the St. Louis district.

Machinery Session

An innovational feature at this meeting was the session given to the discussion of machinery and equipment. At this session representatives of the following machinery concerns spoke of equipment and their organization: Wellington Machinery Co.; Hadfield-Penfield Steel Co.; Lancaster Iron Works; Barbour-Green Co.; International Brick Machinery Co.; Chambers Brothers; American Dressler Tunnel Kilns Co. Mr. Penfield described among other things a new and novel scheme for manufacturing brick without being touched by human hands. Moving pictures illustrated the use of a machine which would receive dried brick from the dryer and set them automatically upon the dryer car, from which they were lifted and placed in a kiln for burning. The picture also illustrated a setting machine and a loading machine. The loading machine is a new development similar to the setting machine used in the Chicago district which loads brick into a motor truck or car much in the same manner as brick are now being set in scove kilns.

Mr. Martin, of Lancaster Iron Works, briefly traced the developments of soft mud brick machinery, and Mr. Anderle, of the International Brick Machinery Co., outlined the history of the stiff mud brick machinery. Mr. Buell, of the Barbour-Green Co., described the method of unloading kilns by the use of conveying systems, and Mr. Chambers told of experiments now being conducted whereby a vacuum was created in the brick machine by exhausting the air with an air pump. The idea of this experiment was to learn whether or not it was possible in this manner to eliminate lamination, which is a great source of trouble on a good many plants.

Mr. Kupfer of the American Dressler Tunnel Kilns Co. answered briefly the main questions asked about tunnel kilns, and showed a moving picture illustrating the Bradford Brick & Tile Co. installation which was described in Brick and Clay Record in the December 27 issue.

Mr. Dick, of Coffeyville, Kan., illustrated a new device which consists of a two-wheeled cart especially constructed, which he stated would aid in placing brick in stock piles or in the railroad cars with a lowering of cost and with much greater ease than by use of wheelbarrows.

Banquet

A description of the convention would be incomplete without telling of the enjoyable social event which took place on Tuesday evening, when a banquet was held, presided at by President Charles H. Bryan, at which Senator George W. Cartwright was the chief speaker. Mr. Cartwright expounded God's Law of Compensation, which he stated affected every individual. He stated that high wages for one group of workers meant low wages for another group, and his message was in effect that the worker pays his own wage. A wage must be such that capital earns a fair return, since without a fair return capital would not be interested and there would be no opportunity for wages.

The other speaker, Quinn O'Brien, spoke of political and economic conditions in America.

Roster of Attendance (Incomplete)

BRICK MANUFACTURERS

L. L. Stephenson, L. L. Stephenson, Birmingham, Ala.; J. B. Van Valkenburgh, Huntsville Transfer & Bldg. Material Co., Huntsville, Ala.

W. W. Dickinson, Jr., Arkansas Brick & Tile Co., Little Rock, Ark.; Guy Dickinson, Arkansas Brick & Tile Co., Little Rock, Ark.

L. S. Collins, Los Angeles Brick Co., Los Angeles, Cal.; G. A. Wild, Western Brick Co., Los Angeles, Cal.; H. H. Bartells, Sacramento Brick Co., Sacramento, Cal.

F. C. Ervin, Denver Pressed Brick Co., Denver, Colo.; R. D. Lindsay, Denver Pressed Brick Co., Denver, Colo.

R. O. Clark, The R. O. Clark & Son Brick Co., The C. P. Merwin Brick Co., The Aetna Brick Co., East Berlin, Conn.; H. R. Clark, The R. O. Clark & Son Brick Co., The C. P. Merwin Brick Co., The Aetna Brick Co., East Berlin, Conn.; W. C. Blanch, The R. O. Clark & Son Brick Co., The C. P. Merwin Brick Co., The Aetna Brick Co., East Berlin, Conn.; James McPherson, The R. O. Clark & Son Brick Co., The C. P. Merwin Brick Co., The Aetna Brick Co., East Berlin, Conn.; M. H. Donnelly, Donnelly Brick Co., New Britain, Conn.; J. F. Reynolds, Stiles & Reynolds Brick Co., North Haven, Conn.; C. W. King, Secretary Conn. Brick Mfr.'s Assn., Hartford, Conn.

Eben Rodgers, Alton Brick Co., Alton, Ill.; Anthony Ittner, General Clay Products Co., Belleville, Ill.; W. W. Ittner, General Clay Products Co., Belleville, Ill.; W. C. Butts, General Clay Products Co., Belleville, Ill.; Robt. Kutzner, General Clay Products Co., Belleville, Ill.; Wm. Kloess, Kloess Brick Co., Belleville, Ill.; B. H. Richards, Jr., Richards Brick Co., Edwardsville, Ill.; C. A. J. Tetherington, Richards Brick Co., Edwardsville, Ill.; Frank B. Lambert, Illinois Brick Co., Chicago, Ill.; Wm. Schlake, Illinois Brick Co., Chicago, Ill.; Thos. A. Bichl, Illinois Brick Co., Chicago, Ill.; E. D. Casten, Illinois Brick Co., Chicago, Ill.; W. C. Willer, Illinois Brick Co., Chicago, Ill.; J. W. Aregood, Illinois Brick Co., Chicago, Ill.; August J. Awe, Illinois Brick Co., Chicago, Ill.; E. Heitbrink, Illinois Brick Co., Chicago, Ill.; G. F. Perkins, Illinois Brick Co., Chicago, Ill.; F. H. Keist, Illinois Brick Co., Chicago, Ill.; Chas. F. Ritter, Illinois Brick Co., Chicago, Ill.; Foster Smart, Illinois Brick Co., Chicago, Ill.; L. L. E. Pippin, Illinois Brick Co., Chicago, Ill.; Chas. B. Obermeyer, Illinois Brick Co., Chicago, Ill.; B. F. Weber, National Brick Co., Chicago, Ill.; James B. Dibelka, Builders Brick Co., Chicago, Ill.; Wm. G. Bohnsack, Carey Brick Co., Chicago, Ill.; Edwin H. Bohnsack, Carey Brick Co., Chicago, Ill.; J. B. Tuthill, Tuthill Bldg. Material Co., Chicago, Ill.; Gray Tuthill, Tuthill Bldg. Material Co., Chicago, Ill.; Walter Lutter, Lake View Brick Co., Chicago, Ill.; Julius Bach, Bach Brick Co., Chicago, Ill.; Henry Bach, Bach Brick Co., Chicago, Ill.; Alfred Lutter, Lutter Brick Co., Chicago, Ill.; Dan Blaul, Jr., Lake View Brick Co., Chicago, Ill.; W. F. Schlake, Illinois Brick Co., Chicago, Ill.; Horace Alsip, Illinois Brick Co., Chicago, Ill.; Oscar Alsip, Illinois Brick Co., Chicago, Ill.; Geo. J. Zahringer, Chicago Brick Exchange, Chicago, Ill.; John T. Hummert, Gem City Press Brick Co., Quincy, Ill.; R. F. Carter, Peoria Brick & Tile Co., Peoria, Ill.; C. E. Carter, Peoria Brick & Tile Co., Peoria, Ill.; F. R. Carter, Peoria Brick & Tile Co., Peoria, Ill.; Wm. Hammerschmidt, Lombard Brick & Tile Co., Lombard, Ill.; Harry E. Mau, Peoria Brick & Tile Co., Peoria, Ill.; W. H. Gifford, S. S. Kimbell Brick Co., Chicago, Ill.; E. D. Mattes, Decatur Brick Mfg. Co., Decatur, Ill.

B. F. Roberts, Roberts Clay Co., Clay City, Ind.; John Andres, Standard Brick Mfg. Co., Evansville, Ind.; Chas. F. Herrmann. U. S. Brick Co., Tell City, Ind.

F. F. Carhart, Sheffield Brick and Tile Co., Sheffield, Iowa.

Harry Jiencke, Independence Paving Brick Co., Independence, Kan.; Carl J. Swanson, Swanson Clay Products Co., Lindsborg, Kan.; S. R. Stimson, Godfrey & Stimson, Rosedale, Kan.; J. J. Amos, Humboldt Brick Mfg. Co., Humboldt, Kan.

Frank H. Haar, Busse Brick Co., Covington, Ky.; James A. Murray, Paducah Brick & Tile Co., Paducah, Ky.; X. B. Wickersham, X. B. Wickersham, Mayfield, Ky.; Ellis X. Wickersham, X. B. Wickersham, Mayfield, Ky.; Jas. T. Howington, Coral Ridge Clay Products Co., Louisville, Ky.

J. W. Peyton, Shreveport Brick Co., Shreveport, La.; J. M. LaGrone, Willowbrook Brick & Tile Co., Blanchard, La.

L. B. Stillman, Saco Brick Co., Saco, Maine.

Warren Griffiss, Baltimore Brick Co., Baltimore, Md.; Glen Perdue, Peninsular Brick Co., Salisbury, Md.

Geo. A. Parry, Boston Brick Co., Boston, Mass.

C. H. Bryan, Mercier-Bryan-Larkins Co., Detroit, Mich.; Harrison F. Clippert, Clippert Brick Co., Detroit, Mich.; Geo. H. Clippert, Clippert Brick Co., Detroit, Mich.; Albert Daniel, Jacob Daniel Brick Co., Detroit, Mich.; Wm. Clippert, Clippert Brick Co., Detroit, Mich.; Chas. Clippert, Clippert Brick Co., Detroit, Mich.; John Mercier, Mercier-Bryan-Larkins Brick Co., Detroit, Mich.

J. C. I. Corning, Chaska Brick & Tile Co., St. Paul, Minn.

John F. Osborne, Corinth Brick Co., Corinth, Miss.

Walter Pocock, Secretary St. Louis Brick Mfrs. Assn., St. Louis, Mo.; A. W. Alberswerth, Higginsville Brick & Tile Co., Higginsville, Mo.; C. E. Miller, Festus Press Brick Co., Festus, Mo.; W. C. Mitchell, Superior Press Brick Co., St. Louis, Mo.; Carl

Feuerherd, Superior Press Brick Co., St. Louis, Mo.; R. L. Mernagh, Alton Brick Co., St. Louis, Mo.; Otto C. Oehler, Continental Brick Co., St. Louis, Mo.; Paul Oehler, Continental Brick Co., St. Louis, Mo.

J. Fred Smith, Smith Brick Co., Omaha, Neb.

H. G. Whitmore, Rochester Clay Brick & Tile Co., Rochester, N. Y.; L. O. Walrath, Acme Shale Brick Co., Buffalo, N. Y.; J. A. Terry, Terry Bros. Co., Kingston, N. Y.; W. N. Cary, Cary Brick Co., Mechanicsville, N. Y.

R. L. Hare, Wyandot Clay Products Co., Upper Sandusky, Ohio; Edwin L. Mitchell, Mitchell Brick Co., Cincinnati, Ohio; W. A. Howell, Collingwood Brick & Clay Co., Toledo, Ohio; J. H. Robinson, Standard Stone & Brick Co., Bellaire, Ohio; R. S. Dingledine, Franklin Brick & Tile Co.. Columbus, Ohio; E. C. Roberts, Cleveland Builders Supply Co., Cleveland, Ohio; R. J. Dawson, Cleveland Builders Supply Co., Cleveland, Ohio; John Tobin, Cleveland Builders Supply Co., Cleveland, Ohio; E. W. Farr, Cleveland Builders Supply Co., Cleveland, Ohio; H. J. Farr, Cleveland Builders Supply Co., Cleveland, Ohio; H. W. Farr, Cleveland Builders Supply Co., Cleveland, Ohio; H. W. Conway, Cleveland Builders Supply Co., Cleveland, Ohio.'

Marshall W. Harris, Ada Brick Co., Ada, Okla.; W. R. Ritchie, Tulsa Vt. Brick & Tile Co., Tulsa, Okla.; Chas. F. Francis, Francis Vit. Brick Co., Muskogee, Okla.; Victor P. Buell, Choctaw Press Brick Co., McAlester, Okla.; J. S. Garvie, Sapulpa Pressed Brick Co., Sapulpa, Okla.

E. C. Shimer, Lehigh Brick Works, Allentown, Pa.; Roy A. Horning, Lancaster Brick Co., Lancaster, Pa.; Arthur W. Krouse, Sharon Clay Products Co., Sharon, Pa.; W. C. Alwine, Alwine Bros. Brick Co., New Oxford, Pa.; T. E. Wilson, Walkers Mills Stone & Brick Co., Pittsburgh, Pa.

T. L. Herbert, W. G. Bush & Co., Nashville, Tenn.; R. C. Whitsitt, W. G. Bush & Co., Nashville, Tenn.; Geo. J. Langenecker, Herbert-Fischer Brick Co., Memphis, Tenn.; B. C. Baldridge, Rives Tile Co., Rives, Tenn.

W. H. Pugh, Marshall Brick Co., Marshall, Tex.; Robt. L. Robertson, Sunset Brick & Tile Co., Gonzales, Tex.; E. H. Rodgers. El Paso Brick Co., El Paso, Tex.; Roy G. Smith, Acme Brick Co., Fort Worth, Tex.; F. J. Carle, D'Hanis Brick & Tile Co., D'Hanis, Tex.; Louis Carle, D'Hanis Brick & Tile Co., D'Hanis, Tex.; Max Almond, Whiteselle Brick & Lbr. Co., Corsicana, Tex.

John P. Cahoon, Salt Lake Press Brick Co., Salt Lake City, Utah.

M. W. Drury, Drury Brick & Tile Co., Essex Junction, Vt.

J. N. Shrum, Shrum Bros., Dayton, Va.; C. B. Shrum, Shrum Bros., Dayton, Va.; Geo. E. Shrum, Shrum Bros., Dayton, Va.: J. A. Pugh, Nansemond Brick Corp., Norfolk, Va.; H. R. Garden, Salem Brick Co., Salem, Va.

A. L. Shrum, A. L. Shrum & Co., Clarksburg, W. Va.; C. M. Shrum, A. L. Shrum & Co., Clarksburg, W. Va.; C. H. Whitescarver, Red Brick Co., Williamson, W. Va.; H. C. Kenyon, Standard Brick Co., Charleston, W. Va.

N. L. Meier, Mormon Coolie Brick Works, La Crosse, Wis.; John J. Schnell, Phillip Schnell & Sons, La Crosse, Wis.

MACHINERY AND EQUIPMENT MEN

Paul A. Meehan, American Dressler Tunnel Kilns, Cleveland, Ohio; H. M. Robertson, American Dressler Tunnel Kilns, Cleveland, Ohio; W. S. Kupfer, American Dressler Tunnel Kilns, Cleveland, Ohio; Thos. M. Low, American Dressler Tunnel Kilns, Cleveland, Ohio; C. P. Mertens, American Equipment Co., Chicago, Ill.; D. J. Strickland, American Equipment Co., Chicago, Ill.; S. D. Wright, Atlas Car & Mfg. Co., Cleveland, Ohio; W. A. Buell, Barber Greene Co., Aurora, Ill.; Chas. F. Bonnot, The Bonnot Co., Canton, Ohio; S. W. Case, Bristol Co., St. Louis, Mo.; L. W. Flood, Chisholm, Boyd & White, Chicago, Ill.; S. S. Chisholm, Chisholm, Boyd & White, Chicago, Ill.; J. H. Chambers, Chambers Bros. Co., Philadelphia, Pa.; John J. Moroney, Chicago Brick Machinery Co., Chicago, Ill.; G. R. Hess, E. M. Freese & Co., Galion, Ohio; E. L. Hess, E. M. Freese & Co., Galion, Ohio; J. F. Chambers, Fate-Root-Heath Co., Plymouth, Ohio; C. W. Fernholtz, Fernholtz Machinery Co., Los Angeles, Cal.; R. S. Bigelow, Goodman Mfg. Co., Chicago, Ill.; F. L. Hopley, Hadfield-Penfield Steel Co., Bucyrus, Ohio; E. J. Shaw, Hadfield-Penfield Steel Co., Bucyrus, Ohio; Lambert Haigh, Hadfield-Penfield Steel Co., Bucyrus, Ohio; R. C. Penfield, Hadfield-Penfield Steel Co., Bucyrus, Ohio; C. B. Sharer, Hadfield-Penfield Steel Co., Bucyrus, Ohio; E. J. Anderle, International Clay Machinery Co., Dayton, Ohio; Geo. H. Paxton, International Clay Machinery Co., Dayton, Ohio; G. W. Unshaw, International Clay Machinery Co., Dayton, Ohio; R. H. McElroy, International Clay Machinery Co., Dayton, Ohio; James. P. Martin, Lancaster Iron Works, Lancaster, Pa.; Geo. H. Smith, Manufacturers' Equipment Co., Dayton, Ohio; A. M. Duval, Manufacturers' Equipment Co., Dayton, Ohio; I. M. Justice, Manufacturers' Equipment Co., Dayton, Ohio; Geo. J. Potts, C. & G. Potts & Co., Indianapolis; Ind.; Frank H. Robinson, Frank H. Robinson, Pittsburgh, Pa.; H. L. Steele, J. C. Steele & Sons, Statesville, N. C.; I. E. Burkett, Schofield Burkett Const. Co.; Edward W. Dow, Stevenson Co., Wellsville, Ohio; E. E. Onkst, Thew Shovel Co., Lorain, Ohio; J. C. Trautwein, Trautwein Dryer & Eng. Co., Chicago, Ill.; F. P. Nickerson, W. S. Tyler Co., Cleveland, Ohio; C. M. Ross, Wellington Machine Co., Wellington, Ohio.

MISCELLANEOUS

H. H. Rosenberg, Brick and Clay Record, Chicago, Ill.; E. G. Zorn, Brick and Clay Record, Chicago, Ill.; F. L. Steinhoff, Brick and Clay Record, Chicago, Ill.; Harry L. Baldwin, American Face Brick Assn., Chicago, Ill.; Maurice B. Greenough, National Paving Brick Mfrs. Assn., Cleveland, O.; D. H. Nichols, Nichols-Moore Co., Cleveland, Ohio; C. O. Dowdell, National Lime Assn., Washington, D. C.; W. B. Ittner, National Fire Protection Assn., St. Louis, Mo.; Geo. A. Madison, National Fire Protection Assn., St. Louis, Mo.; J. E. Randall, Indianapolis, Ind.; G. C. Stoll, Los Angeles, Cal.; R. T. Stull, U. S. Bureau of Mines, Columbus, Ohio; D. Knickerbacker Boyd, Structural Service Bureau, Philadelphia, Pa.; R. C. Purdy, American Ceramic Society, Columbus.

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N. P. B. M. A. STARTS ADVERTISING

The National Paving Brick Manufacturers' Association has announced the inauguration of an advertising campaign to begin at once. For the present the campaign will be carried on exclusively in a selected list of trade journals, with a possibility that the scope may later be extended.

The idea behind the campaign is to lay stress on the advantages of vitrified brick as a paving material as well as the desire of the paving brick industry to be of real public service.

This move may be taken as a sign of considerable improvement and optimism in the industry. According to those in charge, the effects of the suspension of public improvements during the war should be felt strongly during the coming season.

* * *

St. Louis Preparing for Record A. C. S. Turnout

THOSE who attended the Common Brick Manufacturers' Association meeting at St. Louis on January 30 to February 1, were able to learn a few details concerning the annual convention of the American Ceramic Society, which will also be held in the Statler Hotel, St. Louis, during the week of February 27-March 3. St. Louis is making wonderful preparations—the local committees are bending every effort to see that every delegate who attends the forthcoming annual will be comfortably placed and royally entertained.

This year's meeting will be like seven different conventions, holding sessions simultaneously. This is due to the fact that the American Ceramic Society has been divided into seven professional divisions, devoted respectively to terra cotta, heavy clay products, refractories, whiteware, glass, enamel, art. Each of these divisions will have three separate sessions, and there will also be three general sessions where all these seven divisions will gather to hear a program designed to interest all. It is rumored that the enamel division alone anticipates a delegation numbering two hundred at the forthcoming convention.

The list of papers to be presented at this year's meeting, the colloquiums to be held in the form of discussions on the program, are so many and so varied that practically every one interested in any department of the silicate industries will find something especially arranged for him during the convention. About 200 papers will be read at the meetings.

On Monday night, February 27, a smoker will be held, and altho it is called a smoker it will be much more. It will be along the lines of the time-honored Section Q, for which the A. C. S. is noted, and will be followed with a dance. There are several surprises in store for this event, but one of them leaked out at the St. Louis meeting of the C. B. M. A., and it is reported that there is a good possibility that the University of Illinois band, which will be touring St. Louis at that time, will be at hand to render a concert. The University of Illinois band is widely known as one of the largest and best college bands in the country.

On Tuesday evening a banquet at a nominal cost has been provided for, and at this event a new feature will be introduced. Ladies are cordially invited to attend both events, and the local committee is planning other forms of amusements for them.

Aim to Intensify Use of Hollow Tile

Hollow Building Tile Association at Meeting Discusses Building Codes Revision, Increased Use of Tile in Floor and Partition Work and Development of Foundation Field

IN SPITE OF the almost unparalleled period of dullness passed thru in the year just closed, the Hollow Building Tile Association made great progress, as was brought out at the Fourth Annual Meeting held January 25 and 26 at the Hotel La Salle, Chicago, Ill. The meeting was encouraging and successful and the general opinion of manufacturers regarding the coming year seemed to be that 1922 would bring with it a fair amount of business and that it would, on the whole, be a better year than 1921. This opinion probably was prompted by the thought that it could not be worse than last year.

The delegates expressed their satisfaction with the progress made during the year by the association, the results of the advertising campaigns and activities of the association in general.

President Keasbey Expects Good Year

In his opening address, President H. M. Keasbey, president of the National Fireproofing Co., stated that the Hollow Building Tile Association had made great progress in spite of the handicaps of poor business and the wide spread business depression. He quoted the F. W. Dodge Co.'s statistics for the last two months, which show that building is going steadily forward, and prophesied a good year in building. A very significant statement made by Mr. Keasbey was that manufacturers cannot hope to make profits by increasing selling prices. Efforts should not be made to obtain high prices for ware but rather attention should be turned to reduce costs. The only way to accomplish this to the utmost is by the introduction of scientific methods in manufacturing. Research work is aiding the industry greatly in accomplishing cost reductions and President Keasbey urged that the individual manufacturers get behind the association in this work.

Following his address the president introduced John Thompson, Des Moines, Ia., of Pierce's Farm Weekly, as the first speaker. Mr. Thompson gave a most interesting talk on the farmers' economic status.

Out of the many hundreds of reports which are received in his office from farmers from every county in Iowa, not more than five have been found to be discouraged. From his close contact with farmers and their conditions, he is able to make the prediction that good times are not far off. The grain farmer, Mr. Thompson said, has been hardest hit and will probably recover more slowly than the man who devotes his time to cattle or to raising livestock. Better prices for livestock are in store. This is due to the natural consequence following the scarcity of hogs and cattle, and this scarcity, Mr. Thompson said, would not be made up for a number of years to come. $10 hogs by the first of May was predicted.

Wheat Exports Reach Peak in 1921

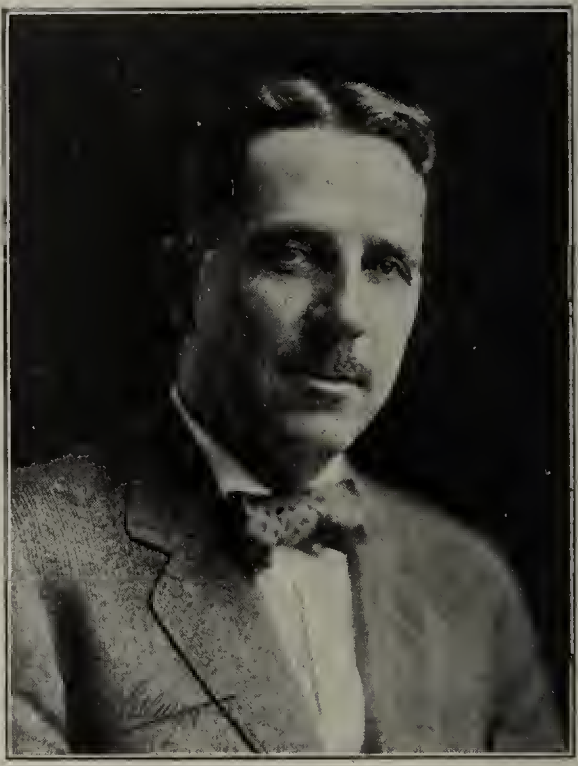
In spite of the general opinion to the contrary, Mr. Thompson stated, wheat exports in 1921 exceeded those of any previous year, 114,000,000 bushels being exported in the first ten months. Large quantities of corn were also sent out of the country. Farmers, Mr. Thompson stated, have not lost faith in this commodity and the crops of corn harvested in 1922 will not be more than three per cent. less than they were last year. He made the encouraging statement that Iowa farmers are in good financial condition, and that farms in that state are less than 15 to 20 per cent. indebted, which is a very fine augury for the future.

Silo Has Great Possibilities

Speaking of hollow tile on the farm, Mr. Thompson stated that a silo was as necessary as a hog or cow, and that there were wonderful possibilities for this class of farm building in Iowa. 2,700 silos are now in use in that state, which is about one-tenth of the amount required. The hollow tile silo has wonderful possibilities, but what is necessary to sell to farmers is an educational campaign showing how a silo is valuable. It is necessary, Mr. Thompson pointed out, that the farmers be shown or be told that an acre of silo corn will produce from two to three times the number of pounds of beef as an acre of dry corn. An almost unanswerable argument for the silo is, as Mr. Thompson brought out, the fact that three times as much land is required to produce 100 pounds of beef without a silo than is required with a silo.

Predicts Big Year for Farmers

Speaking of the coming year, he said that 1922 will be a wonderful year for the farmers, as compared with the one just passed thru. There is no reason why the farmers' buying power should not increase. This does not mean that business will come flocking to the hollow tile manufacturer, but he will have to go out and fight for it. One important thing Mr. Thompson brought out was that the money available thru the Emergency Loan Fund should be brought to the attention of the farmer that he might make use of it in making improvements on his farm.



E. R. STURTEVANT.

The facts which Mr. Thompson brought out in his speech should be very encouraging to hollow tile manufacturers, as he is very close to the farmer.

The meeting adjourned for lunch, and delegates had the rare privilege of listening to the world famous Scotch comedian, Sir Harry Lauder, at a luncheon of the Chicago Association of Commerce as guests of the association.

At the afternoon session, H. N. Tolles, of Chicago, president of the Sheldon School, gave a very fine talk on "Building Confidence in Business."

Urges Organization for Cooperation

At the very beginning of his talk Mr. Tolles made the significant statement that success is governed by law and not luck. This is the age of cooperation, he said, and to be in step with the times we must cooperate and organize. An organization to be successful must be composed of successful units. It is the weak units in an organization which reduce the strength of the whole. To get anywhere in life, Mr. Tolles stated, the principle of cooperation must be learned, and there is no such thing as cooperation without organization. He brought out the vital necessity for members of an organization to attend conventions.

Speaking of selling, Mr. Tolles said that service is now the most important thing in business. The greater the service the greater the profits. Practice the theory of service and your profits will take care of themselves. This, Mr. Tolles, said, is an idea as old as Jesus, and altho it is now 2,000 years since that statement, we are just beginning to appreciate its significance.

Mr. Tolles' talk was followed by a discussion on "Fire Investigation Work at the Bureau of Standards," by P. H. Bevier, of the National Fireproofing Co., New York. Mr. Bevier explained the many tests that have been made and illustrated a great number of them with lantern slides. Altho not nearly completed, the results of the work of the Bureau of Standards would seem to show that there are many uses in buildings for which hollow tile is admirably adapted besides fireproofing work and fire wall partitions. The tests of hollow tile panels will be conducted until definite data has been obtained regarding load bearing qualities, fire resistance and other strains to which such material is subjected in construction work.

R. T. Stull Outlines Research Work

The work accomplished by the Joint Research Council was explained in detail by R. T. Stull, U. S. Bureau of Mines, Columbus, Ohio, who has this work in charge. Actual plant experiments are being carried out at several plants concerned mainly with the most economical method of burning high grade ware.

This research work, as is generally known, was started about a year ago when at a meeting of representatives of the Hollow Building Tile Association, American Face Brick Association, Common Brick Manufacturers' Association and National Paving Brick Manufacturers' Association, these four organizations appropriated equal amounts to carry on research work. In September, 1921, actual field experiments began. A Pullman car belonging to the U. S. Bureau of Mines, which is assisting financially and otherwise, in this research work, was fitted up for this work. The car contains sleeping facilities for six and the cook, an office, kitchen and a few conveniences such as shower baths, and so forth. So far experiments have been made on kilns at three plants, the names of which have not been given out, but are known as plants one, two and three. The method of procedure is to take from the burning records of the plant the average time required to burn off a kiln, and have one kiln burned exactly as is usual at the plant under the eyes of the research workers. With the data obtained from this observation, a kiln was then set and burned according to the directions and instructions of the research workers, the data in each instance carefully plotted and results at the end of the burn compared.

Research Work Still Experimental

Of course this research work is as yet in the experimental stage, and altho in some instances remarkable results in less burning time, lower fuel consumption and higher quality ware have been obtained, it is yet too early to make any definite conclusions from the information obtained.

Reports of the work of the Research Committee will be sent out to members of the four organizations previously mentioned from time to time, as soon as information of real and definite value is available. This talk by Mr. Stull closed the afternoon sessions.

At the morning session, January 26, President Keasbey introduced J. C. Williams, of Critchfield & Co., Chicago. Critchfield & Co. is handling the advertising of the Hollow Building Tile Association, and Mr. Williams' subject was "Following Thru," applying this directly to following thru on the advertising. Mr. Williams stated that hollow tile manufacturers are not now making the most of their market. A closer study of merchandising problems is necessary. In spite of the dull year, the hollow building tile advertising has brought in a great many inquiries, bringing the cost of the advertising, Mr. Williams said, down to about 70 cents per inquiry. Mr. Williams urged the necessity of teaching salesmen to go after every inquiry hard. The inquiry itself can be only a beginning, and each manufacturer must "follow thru" every prospect which is given him. Analyze your market, Mr. Williams urged the tile men, and you will be surprised at the amazing results of your investigations.

Make Business Good

One of the prime requisites in the marketing of any product is the whole-hearted conviction that business is good. This is absolutely necessary, Mr. Williams stated. Business is as good as we make it, and if the mental attitude is right, business is good. The workers, those men that are devoting every minute of their time to their product, are winning out; Mr. Williams proved this by citing many cases where business men have made business good.

Following Mr. Williams' talk, E. R. Sturtevant, secretary-treasurer, rendered his report. This report was a history of the progress made during the year, the work accomplished, and the condition of the industry. Severe competition, Mr. Sturtevant said, caused liquidation which has now been completed. Despite general conditions, association activities in 1921 were as great or greater than any other year. The Joint Traffic Committee has been active in endeavoring to secure a reduction of rates. Work on a cost accounting system is progressing, and during the coming year a satisfactory system may be devised.

Building Codes More Lenient With Tile

One of the most important activities of the association during the past year has been the work of having building codes in cities thruout the United States accept the use of hollow tile for structural purposes. This work has been entirely successful, and many cities are now permitting hollow tile where formerly this product had no chance. Committee C-10 of the American Society for Testing Materials has been very active during the past year, and more adequate specifications regarding the use of hollow tile are now available. This will mean much to the manufacturer, because it will enable the architect to more intelligently make use of hollow tile in buildings.

The Hollow Building Tile Association has a fine record of having lost not a single member during the past year, but has added five new members to the roster.

In conjunction with the advertising campaign carried on in 40 papers, approximately 250,000 pieces of literature have been sent out. Another advertising activity which the Hollow Building Tile Association has been carrying on jointly with other associations is that of encouraging bricklayers' unions to advertise clay products. The expense of this advertising is being borne by the Hollow Building Tile Association, the American Face Brick Association, and Common Brick Manufacturers' Association, and is being carried on thru "The Permanent Builder." 29 bricklayer unions are now doing this advertising in 14 states.

Urges Adopting of Cost Accounting System

In recommendations for work to be done during the coming year, Mr. Sturtevant stated that lower freight rates should be pushed, and the work of the research committee should be encouraged. A cost accounting system is highly important, and work on this should by all means be continued. Mr. Sturtevant also brought out the fact that the public has little knowledge of tile, and that more intensive merchandising efforts must be made to increase sales of this product.

During the morning session M. M. Morrow, of the Nelsonville (Ohio) Brick Co., asked for a discussion by the men present on the promotion of the use of hollow tile in floor construction and partitions. Mr. Morrow stated that this field has been neglected, and hollow tile is losing out to competitive products, mainly because so little has been done to give the architects an appreciation of the structural possibilities of tile and its economies. He urged that something should be done to get hollow tile back into this field to keep the hundreds and hundreds of tons from going into competitive products, without a struggle for tile.

Dealers Want Big Jobs

Mr. Morrow also broached the subject of inquiries received from advertising and which are passed on to the members of the association. Mr. Morrow also stated that inquiries which the Nelsonville Brick Co. received were turned over to its dealers, with very poor results. With the exception of probably one or two, dealers are for the most part not interested in small jobs, houses, garages, and so forth, but are out after the big work. This naturally results in most of the inquiries fading into nothing, since they are, of course, sent in by those interested in home building.

Another matter of considerable interest brought out during the discussions was the use of hollow tile for foundations. P. H. Bevier, of the National Fireproofing Co., stated that he was making an effort to have this included in the standard building codes now in course of preparation by a committee appointed by Secretary of Commerce Hoover. Discussion on this subject brought out that the use of hollow tile for this type of construction is entirely feasible, having been used in Iowa and Ohio 14 to 25 years without a sign of failure. H. R. Straight, of the Adel (Ia.) Clay Products Co., stated that he had had tests made at Ames, Iowa, on hollow tile in foundation work, and that ordinary 5x8x12 tile had withstood a pressure of as high as 18 tons per square foot, which is a great deal over the requirements.

This report of the Hollow Building Tile Association convention could not be considered complete without mentioning the smoker held the evening of January 25, when chicken, both on the bill-of-fare and in the entertainment, held the interest of those attending.

New Officers Elected

Officers elected for the ensuing year are: James T. Howington, Coral Ridge Clay Products Co., Louisville, Ky., president, and Wm. Hutton, Jr., Troy (N. Y.) Fireproofing Co., vice-president. E. R. Sturtevant will as usual continue in the capacity of secretary-treasurer.

Directors of the association for the coming year are: F. F. Anness, Anness & Potter Fire Clay Co., Woodbridge, N. J.; H. C. Downer, Malvern (Ohio) Fire Clay Co.; F. R. Hale, Vigo-American Clay Co., Terre Haute, Ind.; H. R. Straight, Adel (Ia.) Clay Products Co.; J. J. Amos, Humboldt (Kas.) Brick Mfg. Co.; J. H. Payne, Fraser Brick Co., Dallas, Tex.; James T. Howington, Coral Ridge Clay Products Co., Louisville, Ky.; H. M. Keasbey, National Fireproofing Co., New York City; T. J. Neiswanger, Standard Clay Products Co., Oskaloosa, Ia.; Wm. Hutton, Jr., Troy (N. Y.) Fireproofing Co.; S. D. Knight, Kankakee (Ill.) Brick & Tile Co.; J. A. Dailey, Shale Hill Brick & Tile Co., Chillicothe, Mo.; Robert Gamble, Gamble & Stockton, Jacksonville, Fla.; R. G. Wallace, National Fireproofing Co., New York City.

List of Hollow Tile Manufacturers Present

J. J. Amos, Humboldt (Kans.) Brick Bfg. Co.; F. F. Anness, Anness & Potter Fire Clay Co., Woodbridge, N. J.; W. A. Barron, Barron Brick Co., Tribune Bldg., Chicago, Ill.; P. H. Bevier, National Fire Proofing Co., New York; H. T. Brickley, Tri-City Brick Co., Rock Island, Ill.; F. F. Carhart, Sheffield (La.) Brick & Tile Co.; U. A. Cole, St. Anne (Ill.) Brick & Tile Co.; John Dailey, Shale Hill Brick & Tile Co., Chillicothe, Mo.; C. G. Deckman, Medal Paving Brick Co., Cleveland, Ohio; G. W. Dee, Wm. E. Dee Clay Mfg. Co., Stock Exchange Bldg., Chicago; H. C. Downer, Malvern (Ohio) Fire Clay Co.; W. R. Elson, Malvern (Ohio) Fire Clay Co., W. S. Elton, Iowa Clay Products Co., Washington, Iowa; G. H. Galvin, Rockford (Ia.) Brick & Tile Co.; D. C. Haeger, Haeger Brick & Tile Co., Aurora, Ill.; F. R. Hale, Vigo-American Clay Co., Terre Haute, Ind.; T. H. Hammerschmidt, Lombard (Ill.) Brick & Tile Co.; J. A. Hammett, National Fire Proofing Co., Chicago, Ill.; J. T. Howington, Coral Ridge Clay Products Co., Louisville, Ky.; Wm. Hutton, Jr., Troy (N. Y.) Fire Proofing Co.; H. M. Keasbey, National Fire Proofing Co., New York; R. P. Keasbey, National Fire Proofing Co., New York; W. W. Lambert, Wm. E. Dee Clay Mfg. Co., Chicago, Ill.; J. B. Marnane, Barron Brick Co., Tribune Bldg., Chicago; A. P. McDonald, P. Bannon Pipe Co., Louisville, Ky.; M. M. Morrow, Nelsonville Brick Co., Columbus, Ohio; H. Geist, The Independent Brick & Tile Co., Cleveland, Ohio; J. Morrisey, Continental Clay Co., Canton, Ohio; T. J. Neiswanger, Standard Clay Products Co., Oskaloosa, Iowa; J. H. Payne, Fraser Brick Co., Dallas; A. E. Redland, Minnesota Clay Works, Morton, Minn.; W. A. Rohn, Indiana Drain Tile Co., Brooklyn, Ind.; Scott Russell, National Fire Proofing Co., Chicago, Ill.; W. A. Snow, American Clay Products Co., New York City; C. E. Sodergren, Minnesota Clay Works, Morton, Minn.; H. E. Taylor, Kankakee (Ill.) Brick & Tile Co.; R. G. Wallace, National Fire Proofing Co., Pittsburgh, Pa.; H. M. Ward, Haeger Brick & Tile Co., Aurora, Ill.; V. L. Yepsen, Anness & Potter Fire Clay Co., Woodbridge, N. J.

CONVENTIONS IN PROSPECT

February 15 and 16—Iowa Clay Products Manufacturers Association, Des Moines, Ia.

February 27, 28, March 1 and 2—American Ceramic Society, Hotel Statler, St. Louis, Mo.

February 28 and March 1—Wisconsin Clay Manufacturers Association, Republican House, Milwaukee, Wis.

March 14 and 15—Illinois Clay Manufacturers Association, Hotel LaSalle, Chicago, Ill.

POSTPONE CLEVELAND SHOW AGAIN

Due to the insistence of Mayor Kohler that the new public auditorium in Cleveland, Ohio, be complete to the last detail before it is utilized, it has been necessary to postpone for the second time the opening of the American Building Exposition. In all probability the opening day will be Wednesday, April 19.

The Cleveland Complete Building Show Co., which has charge of the show, expects to sell out the remaining unsold space within a short time. Only $15,000 worth is left from a total of $100,000, officials report.

The exhibition will be operated on a non-profit basis and any surplus accumulated will be turned back to the individual exhibitors. Exhibits will cost in the neighborhood of $1,000,000, and will include five complete houses.

The show this year will be national in character, with many of the great national trade associations represented.

The appeal will be directed chiefly at Northern Ohio, but it doubtless will be felt all over the East. Conditions have never been better for such an exhibition and the comment which the plans have caused has already justified the enterprise, leaders believe.

Both floors of the Municipal Auditorium, which is the largest in the Middle West, will be utilized and conservative estimates place the crowd that will view the exhibit at close to a half million.

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IOWA MEETING PROMISES TO BE GOOD

C. B. Platt, secretary of the Iowa Clay Products Manufacturers has announced an unusually strong program for the annual convention of the organization which is to be held at the Chamberlain Hotel, Des Moines, February 15 and 16. The convention is to be held during the week of the building exposition in Des Moines and this fact is expected to bring out an unusually large attendance.

The business session will be held the morning of the first day with the program proper starting that afternoon. Among the features are: "The General Business Outlook," by B. F. Kaufman, president of the Bankers Trust Co., Des Moines; "The Farmer, His Problems and Buying Power in 1922," by W. H. Wiseman, advertising manager of the Homestead, Des Moines; "Building of Cooperative Effort to Market Clay Products," by C. Y. Smith, of the M. B. Hutchinson Co., Ottumwa, and W. J. Goodwin, of the Goodwin Tile & Brick Co., Des Moines; "Salesmanship," by Ralph Tuller, Reliance Brick Co.; "Fuel Economy," by B. A. Moulton, of the ceramics department of the state college, Ames; "Outline of Manufacturer-Dealer Advertising," by P. B. Lessing, of the Lessing Advertising Agency; "What Iowa Materials Will Make in the Way of Ceramic Products," by Paul E. Cox, state college, Ames; "Tile Drainage of Highways," by R. V. Crum, engineer for the state highway commission.

There will also be talks by secretaries of the various associations represented at the building exposition and the annual election of officers.

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Short Course Draws Attendance From All Parts of U. S.

THE MOST SUCCESSFUL short course in ceramics ever held by the University of Illinois, at Champaign, Ill., was conducted from January 23 to February 4. During that time 71 men enrolled, including all branches of the industry, all parts of the country, and all ages. The deans of the class in point of age were Wm. Anderson, of Joliet, Ill., aged 61, and L. F. McGinty, of the L. L. Stephenson Co., Lovick, Ala., aged 57. It was very interesting to see these and others of approximately 50 years of age going to school the same as in their boyhood days. One of the well-known attendants was B. Mifflin Hood, president of the company which bears his name.

As shown by the attached list, the attendants came from California, New York, Virginia and Georgia and also from Canada, Alabama, Mississippi and New Mexico. Considerable interest was aroused in this course thru the publicity given it by Brick and Clay Record.

This is the first course held since 1920, and the attendance is very good evidence of the interest shown in full efficiency and reduced costs for clay products manufacture. The course was held the same as outlined in the January 10 issue of Brick and Clay Record. 14 professors and instructors of the University of Illinois assisted in the lectures. Charles F. Binns, director of the New York State School of Clay Working and Ceramics; Arthur M. Buswell, chief of the Illinois State Water Supply, and J. C. Hostetter, manager of the Steuben Division of the Corning Glass Works, were the instructors outside of the regular corps of the University.

The interesting lecture of Mr. Hostetter included slides and moving pictures of the manufacture of Pyrex glassware.

On the evening of Wednesday, February 1, the class held a banquet and smoker at the Green Tea Pot Inn, with the professors and assistants as guests.

The students who registered for the course were the following:

Alabama—L. F. McGinty, J. M. McGinty, L. L. Stephenson Co., Lovick.

California—Holt Condon, Batchelder-Wilson Co., 2633 Artesian Street, Los Angeles. Wm. G. Jackson, Empire China Co., Los Angeles.

Canada—G. E. Armstrong, Harry Armstrong, M. J. Moore, Armstrong Brothers Brick & Tile Co., Fletcher, Ontario. A. E. Berry, Ontario Provincial Board of Health, Ontario.

Georgia—J. W. Bates, H. L. Keheley, T. L. Keith, A. S. Lewis, G. H. Lewis, L. W. Rodgers, B. Mifflin Hood, B. Mifflin Hood Co., Atlanta.

Iowa—E. P. Bradshaw, Bradshaw & Co., Fort Dodge. L. E. McCorkle, De Soto Brick & Tile Works, De Soto. G. C. Newby, Lynville. Cummins Rawson, Iowa Pipe & Tile Co., Des Moines.

Illinois—Wm. Anderson, 111 S. E. Avenue, Joliet. Hugo Babtist, Springfield Paving Brick Co., Springfield. Horace T. Brown, Illinois Glass Co., Alton. J. G. Eppinger, Harris-Dillavou Co., Champaign. H. W. Galhuly, White Hall Sewer Pipe & Stoneware Co., White Hall. Alfred Harrison, Jacksonville Tile Co., Waverly. J. E. Lamar, Illinois State Geological Survey, 903 W. Main Street, Urbana. Ray Leonard, Western Brick Co., Danville. Henry Mauschbaugh, Peoria Brick & Tile Co., Peoria. W. S. Middleton, Middleton-Kelley Brick Co., Canton. Frank A. Orland, Murphysboro Paving Brick Co., Murphysboro. John A. Rapp. Evanridge Potteries, 1244 Chicago Avenue, Evanston. Harold E. Sanner, 832 S. English Avenue, Springfield. Louis P. Tiernan, Tiernan Brick Co., Macomb. S. H. Tsou, T. Y. Tsou, 1306 W. University Avenue, Urbana. Wm. W. Wilkins, Lewis Institute, Chicago. J. K. Whang, 1306 W. University Avenue, Urbana. Harold Atherton, Acme Brick Co., Danville.

Indiana—E. F. Clemens, Cannelton Sewer Pipe Co., Cannelton. H. R. Hay, Industrial Brick Works, Boonville. Chas. Hutchinson, Ayer-McCarel-Reagan Clay Co., Brazil. R. T. Kleymeyer, Standard Brick Manufacturing Co., Evansville. Gustave Luttringhaus, American China Products Co., Chesterton. Walter S. Moellering, Wm. Moellering & Sons, Fort Wayne. C. G. Powell, Montezuma Brick Works, Montezuma. John M. Price, Brazil Hollow Brick & Tile Co., Brazil. John E. Sachs, Crown Potteries Co., Evansville. J. E. Tibbets, Kalamazoo Clay Co., Carbon. Bob Uhl, L. C. Uhl, Uhl Pottery Co., Huntington. Walter P. Wood, Best Brick Co., Evansville.

Kansas—Harry G. Brown, Brian O'Brian, Buffalo Brick Co., Buffalo.

Missouri—William W. Aulepp, Russell Engineering Co., St. Louis. J. H. Ivery, Hydraulic-Press Brick Co., St. Louis.

Mississippi—Chad. L. Archie, Corinth Brick Co., Corinth.

New York—H. Grossman, 855 Kelly Street, New York City.

New Mexico—Martin C. Sundt, East Las Vegas.

Nebraska—J. W. Lanning, Klose Brick & Tile Co., Lincoln.

North Carolina—R. W. Harris, Harris Clay Co., Dillsboro.

Pennsylvania—O'Neill Kane, Kushequa Brick Co., Kushequa.

Ohio—Wiley E. Buck, Potters Co-operative Co., East Liverpool. R. G. Kinnel, The Burton-Townsend Co., Ashtabula. Joseph A. Welton, National Lamp Works, E. Cleveland. J. B. Conrad, Richland Shale Brick Co., Mansfield. Donald Renkert, Bert. Schroeder, Metropolitan Paving Brick Co., Canton.

Tennessee—R. G. Deener, W. H. Herbert, W. G. Bush & Co., Nashville.

Virginia—W. P. Sullivan, Nansemond Brick Corporation, Norfolk.

Wisconsin—J. C. Vollrath, The Vollrath Co., Sheboygan.

Why John and Martha Built of Brick

History of a Brick House — Story Built on Actual Facts and Woven Into an Interesting Narrative, Showing Value of Advertising

"WELL, MARTHA, old Trumbull did give me that secretary's job after all," cried John Mathews to his wife as he bounded up the steps, home from his day's work.

"Oh, I'm so glad, John, so glad. Now maybe our dream can come true after all."

Their dream! John let his memory carry him back nine years, when he and Martha, just married, had made their great plans for the future. For the first few years, they would be content to live in the frame house which Trumbull, his employer, had found too small for his use and was content to rent to them for $40 per month. How bright everything had seemed to them then. He was little more than a clerk in the office of the Trumbull Lumber Co., the biggest business house in the town of Janetville, Ind. Tho his salary was small, his ambitions were great, almost as great as his enthusiasm, and he was full of the assurance of youth that he could make good.

Living in the rather ancient wood house, he and Martha had schemed and saved for the time when they would be able to build and own a real home, and where, if fortune favored them, some day little John and Martha could play in the garden.

As he walked into the house arm in arm with his wife. John thought that today had made the realization of their dream possible. How easy it had been! Trumbull had merely called him into his office and said, "John, I've decided to give you a chance at the secretary's job. I hope you'll fill it as capably as Jones did before he left. Your salary will be increased $20 a week."

This was partially what he had worked for for nine years, and it had come in such a prosaic fashion.

"Oh, John," Martha was saying across the dinner table, "I can just see our dream house all built, with beautiful gardens around it and lovely green hedges around the property just as we have always pictured it. I've carried it around in my mind so long that it is complete in almost every detail."

"It'll be a peach of a bungalow, pink stucco, with five cozy rooms, say, I can hardly wait till we start building. Let's draw up some sketches after dinner." John was impatient to begin.

"We can't tonight, Jack; we have to go over to the Brown's. Tonight's their bridge party, you know."

"That's right. I'll bet Brown will be pleased to hear that we can go ahead and build on the lot next to theirs. You know they are going to start building in a few weeks."

"Why, yes, Ethel was telling me just the other day they had plans almost completed for a six-room frame bungalow."

On the way to the Brown's, John and Martha talked of nothing else but their new home. They would start building at once. No need for any further planning, for hadn't they been planning for the last nine years until the house was complete in every detail, even to the type of stucco they would use.

Arriving at the Brown's, they were greeted at the door.

"Hello, Jack," Brown extended both hands, "heard you've been promoted."

"Why, how did you know?" Jack wanted to know.

"Met Jones downtown today, and he told me Trumbull was going to give you his job. I'm mighty glad to hear it, too. You've certainly worked hard enough for it."

"Come in, folks. Tonight's the night that Joe and I will take revenge for our last drubbing at bridge," Mrs. Brown was saying.

The two couples were great friends, and these occasional evenings of bridge were greatly enjoyed. John and Joe had been friends since their boyhood days, were married in the same year, and the friendship had progressed ever since.

"How is your house coming along?" asked John. "By the way, what's this?" picking up a booklet entitled "The Story of Brick," and glancing thru its pages. "By Jove! This looks interesting. Look here, Martha, here's something we never thought about. Where did you get this book, Joe?"

"That's some book, Jack, you ought to get it and read it before you build your house. Ethel happened to see an 'ad' in the Ladies' Home Journal, by the American Face Brick Association, one day, and decided to send for the book. I suppose you know that Ethel and I were just about ready to go ahead on a frame house, stuccoed. There are hardly any brick houses in town, and we never thought about it, but since reading 'The Story of Brick' we're not in such a big hurry to build of frame."

"This book interests me; I think I'll send for one. Martha and I have our stucco house all planned out, however, and I'm afraid brick will come too high."

This Is the Home Which John Matthews Built and Which Furnished the Inspiration for This Story. The House Was Built According to "Home of Beauty" Plan No. 127.

Several days later, as John came home from his work, Martha greeted him at the door with a rather sober expression on her face. "What's the matter, Martha?" asked John, "you look quite serious."

"Do you remember, John, about a week ago you sent to the American Face Brick Association asking for their booklet, 'The Story of Brick'? It came in the mail today, and I spent most of the afternoon studying it. It's awfully interesting, and I've been thinking all afternoon, wouldn't it be wonderful if we could have a brick home?"

"But you know, dear, that we haven't very much money to build. Brick is pretty, I'll admit, but it also is pretty expensive."

"That's just the part that set me thinking. The book says it doesn't cost much more to build a brick house than it does to build a frame. Five to ten per cent., I think they say."

"Is that all! Let me see the book. I'm beginning to get interested. No question about it, it would be great if we could have a brick home. There aren't but a few in town, and they're owned by wealthy people. Say, wouldn't we be proud of a real, honest-to-goodness brick home!"

Leslie Welter, Moorhead, Minn., Owner of This Home Says, "My House Created Such a Favorable Impression That Several Houses Have Been Built of Brick in This Vicinity This Season." The House Was Built from the A. F. B. A. "Home of Beauty" Design No. 101.

After dinner John took the book, settled himself comfortably in the big rocker, his favorite chair, and began to read. As he read he became more and more interested, and the more interested he became the more he wondered why he had never considered brick seriously. If a brick home really was only five to ten per cent. more expensive than frame, why, maybe—anyhow they could try it out. So far as he knew, there were only a few brick houses in the town. How their house would stand out from the stucco and wood homes, pretty tho they were, but best of all, years and years from now it would still be just as pretty as the day it was built.

"Why not send for the 'Home of Beauty' which they mention on the card which came with the book? Maybe we can find something like the home we have been planning all these years," said Martha.

About ten days later the postman brought the booklets containing the small house designs, and together Martha and John pored over the many beautiful plans and ideas presented.

"Here's just what we want, Jack. That house with the large windows on the side, the cozy fire place and big porch. Oh, Jack, don't you think we can use brick? If it's only a small percentage more, it would only cost us about $500 over what we have been figuring on, and there wouldn't be any painting or repairing, and the book says insurance rates would be lower on a brick house. It would really be cheaper than frame in the long run."

"I am more than half convinced, Martha, and I'll tell you what I am going to do. I am going to take this plan down to Dave Ralston and ask him to figure just what the difference between a frame and a brick house would be. He has specialized in home building for the last few years, you know, and ought to know something about it. By the way, I talked with Joe the other day, and he has decided to use brick after all."

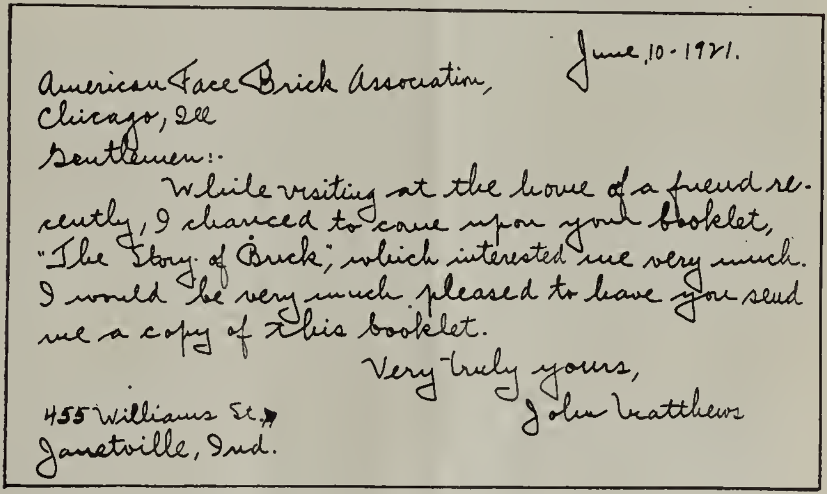
All that next day at the office John could think of nothing else but his home. What would Dave say? How much more would brick really cost? "Even if we have to pay ten per cent. more," John argued with himself, "it would be well worth the difference."

That afternoon he strolled over to Ralston's office and asked the results of his figures. "Sit down, Jack. Here's a rather peculiar thing I want to tell you about. I notice you got your ideas for a brick home from the American Face Brick Association, and that's a coincidence, because they are directly responsible for my own change of opinion regarding face brick construction. I have been building houses now for about five years, and I used to think that brick construction came to about 20 per cent. more than frame. For that reason, I have often discouraged it. Several months ago, in the office of a contractor friend of mine in Indianapolis, I got hold of a copy of 'The Manual of Face Brick Construction,' put out by the Face Brick Association, and I learned some things about brick that I never knew before. That house that you have picked out will cost you about seven to eight per cent. more in brick than it will in frame. Now, personally, I would rather build you a frame house than I would brick, because I can handle it better and know more about it, but since you are a friend of mine I don't mind telling you that you will be way ahead in the end if you use brick."

"Thanks, Dave. I am certainly glad to hear that," said John, "and brick it is. I'll send for those plans and get specifications right away, and you can put up my house for me."

The Scene Changes.

And now that Martha and John Mathews have been safely converted to the use of brick for their home, we will let down the curtain on this act and raise it again on another scene, the offices of the American Face Brick Association. We come into the office one morning just as the mail is being received and deftly opened by a young lady, who kindly permits us to look thru the letters. Here we find a letter which seems to be characteristic of a large number.



June 10-1921.

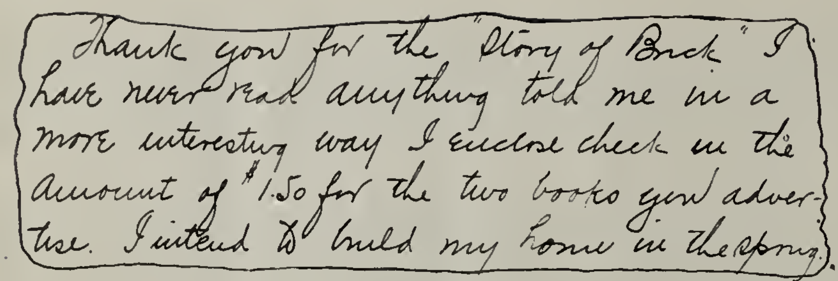
American Face Brick Association,
Chicago, Ill
Gentlemen:-

While visiting at the home of a friend recently, I chanced to come upon your booklet, "The Story of Brick," which interested me very much. I would be very much pleased to have you send me a copy of this booklet.

Very truly yours,
John Matthews

455 Williams St.,
Janetville, Ind.

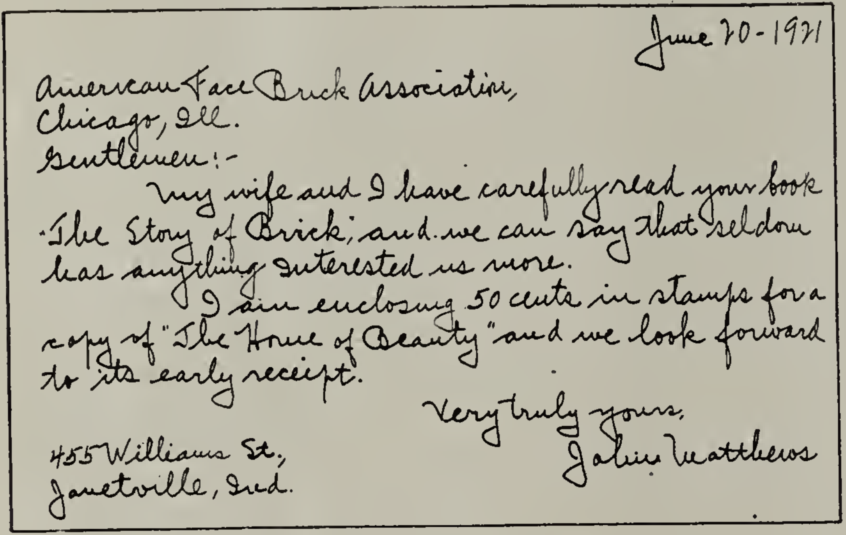
But this indirect result could not follow without the serious and extensive advertising campaign which the association has been conducting for two years. For example, in 1921 10½ million subscribers, or a possible 20 million different readers, were appealed to thru 17 national mediums and a dozen trade journals. The response has been generous, and thousands of requests are being sent in for association literature, such as "The Story of Brick." This booklet especially has met with almost universal commendation. The association has a whole file of letters such as the following from a man in New Jersey:



Thank you for the "Story of Brick" I have never read anything told me in a more interesting way I enclose check in the amount of $1.50 for the two books you advertise. I intend to build my home in the spring.

The success of the book is evident from the remittance sent for plans.

This letter brings us back to our friends, Martha and John Mathews, who are affected in the same way as the New Jersey man.



June 20-1921

American Face Brick Association,
Chicago, Ill.
Gentlemen:-

My wife and I have carefully read your book "The Story of Brick," and we can say that seldom has anything interested us more.

I am enclosing 50 cents in stamps for a copy of "The Home of Beauty" and we look forward to its early receipt.

Very truly yours,
John Matthews

455 Williams St.,
Janetville, Ind.

And now the interest of the prospect has been secured in earnest. For "The Home of Beauty" is so attractively gotten up and contains such a number of beautiful and at the same time practical house designs that it is difficult to imagine that after looking thru this book any prospective builder would consider anything but brick for his home.

Almost from the very day that it was put before the public, two years ago, the literature of the American Face Brick Association has won the unqualified approval of prospective home builders and others interested in building. It is recognized, of course, that anyone who has money can advertise, but the mere spending of money does not always insure results. After all, that is what we are all after—results—and the quality of A. F. B. A. advertising has been such as to produce results almost beyond the expectation of the advertisers. The three plan booklets of the association, "The Home of Beauty," "Bungalow and Small House Plans," and "Manual of Face Brick Construction," have in the short time that they have been ready for distribution been sent to many thousands of prospective face brick customers. Up to the present nearly 83,000 copies of "The Story of Brick" had been distributed, and of this number about 74,000 copies were sent to the general public on individual request. The balance were sold to members and dealers.

Many Thousand Plan Books Sent Out.

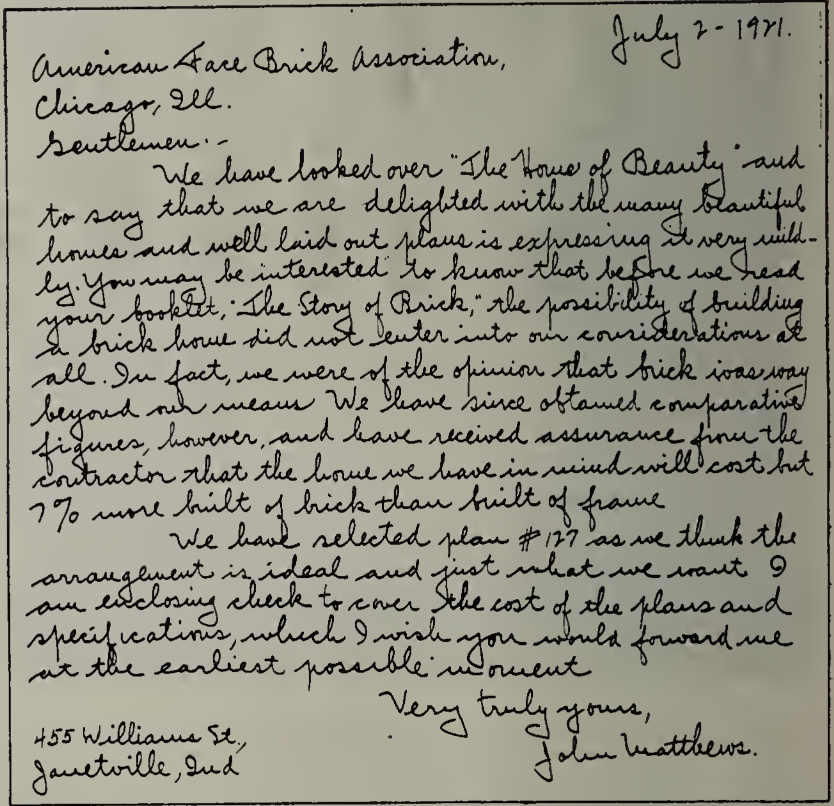
Approximately 53,000 copies of the "Home of Beauty" have been sent out. "The Manual of Face Brick Construction" has not as yet been offered to the public generally, but only thru the trade papers, and approximately 10,000 copies have been distributed.

Of "Bungalow and Small House Plans," issued for distribution in May, 1921, and containing 64 designs, about 39,000 copies were distributed by November 25, making a total of 49,882, with those bought by members and dealers.

With the exception of "The Story of Brick," none of the literature mentioned above is free, but a nominal price has been charged for it to exclude mere curiosity seekers.

One of the most important functions of the advertising of the American Face Brick Association has been to dispel the idea that the price of brick is prohibitive for the man of comparatively small means. Letters have come into the association offices time and time again expressing great surprise at the comparatively small difference in cost between a face brick home and a frame home. This difference in cost, of course, varies widely thruout the country, in some instances being very low, and in others as high as 12 per cent. These letters show that there is a distinct need for educational propaganda.

But we have deserted Martha and John sufficiently long, so let us see what they are now doing. The following letter tells us how far they have progressed:



July 2-1921.

American Face Brick Association,
Chicago, Ill.
Gentlemen:-

We have looked over "The Home of Beauty" and to say that we are delighted with the many beautiful homes and well laid out plans is expressing it very mildly. You may be interested to know that before we read your booklet, "The Story of Brick," the possibility of building a brick home did not enter into our considerations at all. In fact, we were of the opinion that brick was way beyond our means We have since obtained comparative figures, however, and have received assurance from the contractor that the home we have in mind will cost but 7% more built of brick than built of frame

We have selected plan #177 as we think the arrangement is ideal and just what we want. I am enclosing check to cover the cost of the plans and specifications, which I wish you would forward me at the earliest possible moment

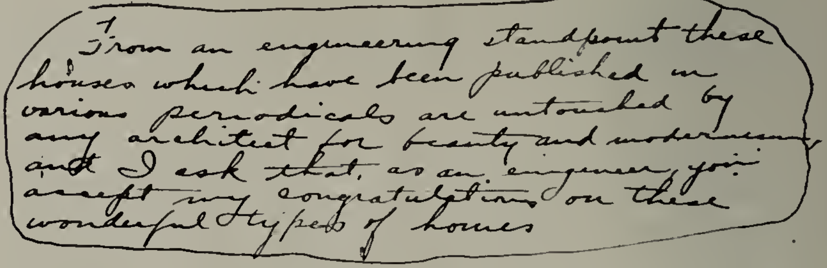
Very truly yours,
John Matthews.

455 Williams St.,
Janetville, Ind

And now the prospect is landed and convincingly converted to brick by the American Face Brick Association. This, however, causes no unusual disturbance in the association offices, because it is an every-day occurrence and has come to be taken as a matter of course.

172 Plans on Hand.

Let us just say a word or two of the plans and specifications for bungalows, cottages and small houses, prepared by architects for the American Face Brick Association. The association now has on hand 50 "Home of Beauty" plans, 92 bungalow plans and 31 other plans listed in "The Manual of Face Brick Construction." These are actual working drawings, complete in every detail, and have been pronounced by men associated with the home building field as being equal to the best type of plans procurable. An engineer from Akron, Ohio, writes:



From an engineering standpoint these houses which have been published in various periodicals are untouched by any architect for beauty and modernness and I ask that, as an engineer, you accept my congratulations on these wonderful types of homes

Interest among the building public in this plan service has been widespread. During 1921, 132 "Home of Beauty" plans have been bought, exclusive of those sold to members. To competitors 35 have been given away, making a total of 167 in the hands of prospective builders. Twelve "Manual" plans have been sold, but the "Bungalow and Small House Plans" seem to be favorites, and 98 of these are in the hands of in-tending home owners. All these prospects are carefully followed up, and it has been found that many have completed their homes, pictures of which are in the hands of the association.

Home of J. C. Breckon, Denver, Colo., Built According to the A. F. B. A. "Home of Beauty" Design No. 102. Mrs. Breckon Says, "The House Has Created Much Favorable Comment. . . . . I Consider It An Extreme Artistic Little Home."

Out of all the various requests received at the A. F. B. A. offices, there have developed what may be called distinct prospects to the number of 15,758. These have been tabulated and sent to members of the association.

Face Brick "Movie" Accomplishes Much.

Besides those methods mentioned above, there are other ways in which the American Face Brick Association builds up good will for face brick. One of these is the face brick "movie," of which ten copies have been made. This is a two-reel film on the manufacture and uses of face brick, and is doing work constantly from nine centers among thousands of people. This film is naturally not productive of any direct results, but it is one of the tools of an organization which has set out to build up a wonderful asset for face brick in the shape of good will. And that, after all, is the most important function of advertising.

Altho face brick is as old as any construction material you can name, the public probably knows less about it than about many a material which has been in existence less than a generation. The advertising of the American Face Brick Association is the first concerted effort to raise face brick to its proper place in the minds of the public. Results of this advertising, as outlined at the last A. F. B. A. convention by Dr. G. C. Mars, director of the service department, have been little short of astounding. It must be remembered, too, that these results were obtained, for the most part, at a time when financial and business depression held the country in a strong grip.

Advertising Effects Being Felt

The message of face brick has been before the public hardly two years, barely time enough to make more than a small dent in the big percentage of construction going to frame. But it has made more than a dent, and face brick is encroaching more and more into the fields of non-permanent materials, so much so that these competitive materials are organizing forces to combat the influence of this face brick popularity, and secure again the firm grip they have held on the home building public in past years. Manufacturers must bear in mind, however, that this advertising, as Dr. Mars says, "is only a start. Your industry now has a name and a standing before the American public such as it never had before. You are a great national, going concern. Take pride in that fact and push vigorously to the completion of what you have so well begun."

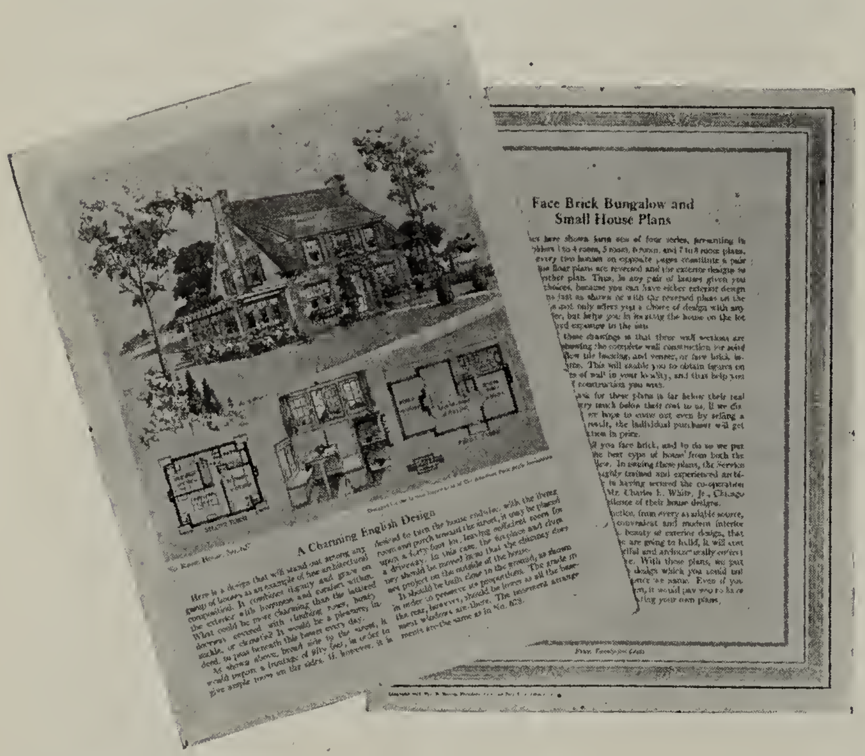
The advertising of the American Face Brick Association

Three of the American Face Brick Association Booklets Which Spread the Message of Face Brick in a Convincing Way.

is to a large extent of a general character, and is building good will for face brick in general. This means that every face brick manufacturer in the country has a share in the benefits of this advertising, regardless of whether he has a share in the expense or not.

Co-operative Advertising Necessary

We are reminded in this connection of a powerful six-cylinder gasoline engine. When all the units which go to make up this engine are working properly and all six cylinders firing perfectly, you are getting a maximum amount of power and energy from it. If, however, one of these cylinders is not firing, you are not only getting less power and less efficiency, but this one cylinder is literally fighting the rest of the engine. True enough, the engine can continue to run and does continue to run, but it is "missing," and you are not getting the most service out of it.



Face Brick Bungalow and Small House Plans

A Charming English Design

A Page from the "Face Brick Bungalow and Small House Plans" Booklet. These Houses Have Received the Highest Commendation.

H. N. Tolles, president of the Sheldon School, and nationally known as a speaker and man of fine ideas, recently said at the convention of the Hollow Building Tile Association, "This is the age of cooperation, and to be in step with the times we must cooperate and organize. Organization, to be successful, must be composed of successful units, and to get anywhere in life the principle of cooperation must be learned. There is no such thing as cooperation without organization."

This is not only the age of cooperation—it is also the age of advertising; combining the two, we have cooperative advertising, which is an irresistible force and the most powerful marketing factor known.

* * *

DECEMBER 27 ISSUE ROUSES MUCH INTEREST

Owing to the tremendous interest aroused in the clay products industry by the cost cutting campaign of Brick and Clay Record there were distributed 1,000 extra copies of the December 27 issue which contained the description of the Bradford Brick & Tile Co. plant. Moreover, reprints of the special section devoted to the above story to the number of approximately 2,100 have also been distributed. This makes the largest distribution of any issue of Brick and Clay Record in recent years and is a certain sign of the interest manifested in and the value of the issue.

Numerous requests for extra copies have come in and despite the fact that so many more copies than usual were printed of this issue we have been unable to fill a great number of these requests.

Brick and Clay Record is anxious to secure some copies of the December 27 issue and will pay double the percentage subscription price to any one who is willing to part with his issue.

* * *

EASTERN BRICK ASSOCIATION MEETS

The annual meeting of the Brick Manufacturers' Association of Eastern Pennsylvania, Southern New Jersey and Delaware, was held at Allentown, Pa., on January 17. A number of important matters in the industry were discussed, including the outlook for construction during the coming year, and which, it is believed, will be a record one in apartment and dwelling construction in certain eastern districts. Edgar C. Shimer, Allentown, well-known local brick manufacturer, was re-elected president; Frank S. Gery, Reading, Pa., head of the Glen-Gery Shale Brick Co., vice-president; William Conway, Philadelphia, secretary, and H. H. Oberly, Wilmington, Del., treasurer.

* * *

NATIONAL BUILDERS' MEETING AT MEMPHIS

The National Association of Builders' Exchanges will hold its annual convention at Hotel Chisca, Memphis, Tenn., February 20-23. An attendance of several hundred delegates is assured. The program will be of great interest in construction and material circles. Charles W. Bernhardt, president, from Atlanta, was in Memphis recently perfecting final details on the program. The Western delegates en route will be entertained the day following by Little Rock (Ark.) Builders' Exchange, and a side trip will be made from the city to Hot Springs, Ark.

* * *

ASSOCIATED GENERAL CONTRACTORS MEET

There is definite assurance that construction recovery is under way and that this is the first phase of a general business revival, according to business leaders who addressed the annual convention of the Associated General Contractors of America in Cleveland, January 17 to 19. Among the speakers who addressed the gathering was Colonel Leonard P. Ayres, vice-president of the Cleveland Trust Co., who expressed the belief that prices will fall intermittently for 10 or 20 years, but he thinks the construction industry will be immune from many of the embarrassments of the coming period, because i supplies a market at present 2¼ years behind its normal production of building.

A number of men high up in financial and business circles addressed the contractors, among these Ernest T. Trigg, president of the National Federation of Construction Industries, who spoke on "Cooperation in Construction."

* * *

BALTIMORE AND TRENTON PLANNING BUILDING SHOWS

Baltimore, Md., and Trenton, N. J., are following the lead of New York, Chicago and other important cities with regard to Own Your Home building expositions, and arrangements are now being perfected in these two municipalities for early exhibits.

At Baltimore, the Better Homes and Building Exposition will be held at the Fifth Regiment Armory, April 29 to May 6, under the auspices of the Real Estate Board of Baltimore. More than half the space available has now been contracted for and other allotments are being made rapidly.

The Trenton show will take place in the Armory in that city, March 6 to 11, under the direction of the Trenton Real Estate Board. A number of special features are being arranged for the event, among which will be the awarding of prizes to pupils of the local schools for the best essays on the subject of the exposition.

* * *

LOANS MUCH MONEY FOR HOUSING

Last summer the Metropolitan Life Insurance Co. announced that it would place at the disposal of home builders $50,000,000, the Chicago Trust Co. to act as agent in the distribution of this loan. The offer was made at a time when money scarcity was the most signal obstacle in the way of home building. The Chicago Trust Co. has made good progress in this work, and at a luncheon given to the Chicago Press recently, some very interesting figures were given out. These figures show that by means of the Metropolitan housing loans, a total of 1,040 families have been housed. A total of 810 buildings, of which 700 were residences and 110 apartments, have been financed, representing a total investment of $3,326,300.

The average loan on residences has been estimated to be $3,455 and the average loan on apartments $8,250.

Arthur B. Cody and Hiram S. Cody, managers of the real estate loan department, Chicago Trust Co., are doing considerable work to bring about the success of this financing plan. Local banks in Illinois, northern Indiana and Wisconsin have been organized to handle local loans, while Chicago and suburbs are handled direct. The movement has gotten much publicity thru the efforts of these two men mentioned, and deserves commendation because it is performing a real service.

* * *

Kentucky Clay Men Discuss Cooperative Advertising Plan

ABOUT 20 men were present at the annual meeting of the Kentucky Clay Products' Association, held at the Louisville Old Inn Hotel, January 24, including members, machinery men, visitors, and so forth.

The old officers were reelected, except for one change in directors. F. C. Klutey, Henderson, Ky., is president; A. H. Schneider, of Nicholasville, vice-president; T. Bishop, Louisville, treasurer; and J. Crow Taylor, Louisville, secretary. Directors are James T. Howington, Louisville; M. J. Bannon, Louisville; L. Ruby, Providence; J. H. Clark, Owensboro; George H. Dalton, Hopkinsville; H. C. Kleymeyer, Evansville; W. H. Hall, Maysville; H. C. Cramer, Lexington; and Frank Hill, of Paducah.

During the discussions it was found that prices are fairly close in line thruout the state, there being a range of as much as $3 a thousand in some cases.

Reports showed that the majority of plants are closed down for the present, either for repairs, or due to the fact that they are open weather plants, but most of these are planning to start again shortly. On concern reported only 50,000 brick on hand, but some have 700,000, and a million or better in stock. General reports were optimistic, and it is believed that there will be active building during the year.

One interesting discussion came up concerning heavy brick losses in one plant, where a good deal of limestone was encountered in the clay.

An advertising plan is being worked out in Louisville whereby brick manufacturers, bricklayers and brick contractors will probably get together and spend some money in advertising brick.

Farmers Not Yet in Market

In discussing drain tile prospects T. Bishop, of Louisville, reported that he was quite busy installing drain tile for farmers in the Louisville district, but that the outlook was not as promising as it had been. In Western Kentucky, Southern Indiana, and a good deal of the South, farmers are overbought, have high-priced land on their hands, and as a result of low prices for their crops, are not in any buying humor.

Objection was registered to the very low prices at which some hollow tile is being sold in Indiana, bringing only around $4 a ton in some instances, whereas Louisville is asking $8 a ton, and some of the Western Kentucky plants cannot produce and market it profitably at much less than $8.

It was claimed that labor costs are not much lower, and it is costing around 30 cents an hour for common labor. James T. Howington, of the Coral Ridge Clay Products Co., stated that in 1921 prices were approximately $4 a thousand lower than in 1920, but operating costs have only been reduced about $1.50 a thousand, which means that profits per M. have been reduced $2.50 a thousand.

H. C. Kleymeyer, of Evansville, Ind., held that 95 per cent. of the cost of all commodities came back to labor.

Mr. Howington stated that he figured his clay at about one-fifth of a cent per thousand brick. He also remarked that brick manufacturers are buying coal at less than cost of production in many instances, and that some few brick companies which have coal on their own property, can't mine it as cheaply as they can buy it.

Members regretted keenly the fact that Harry C. Cramer, of the Lexington (Ky.) Brick Co., was still too ill of rheumatism to come to the meeting, having been ill for more than a year.

Says Brick Prices Are Too Low

The secretary was also instructed to get up resolutions and send copies to the family of the late Fred Klutey, of Henderson, Ky., father of the president of the Kentucky Clay Products Association, who died at Henderson on January 16.

One member in discussing prices said that in 1918, the Government figured that $15.50 was a fair price for common brick in Louisville, and that a ten per cent. profit in dealing with the Government was enough, but it was intimated that as a regular diet the brick man should figure 15 to 20 per cent. on invested capital to carry on in good times and poor. This member claimed that conditions today were about the same as during the first six months of 1918, and that figuring 20 per cent. on investment in a thousand brick, the price should today be at around $17.50 instead of around $15.

Other than machinery men among those present at the meeting were L. L. Richardson, of Barbourville; F. C. Klutey, Henderson; T. Bishop, A. T. Bishop and H. Herpel, Louisville; A. G. Shields, West Point; James T. Howington, Louisville; Andrew Hillenbrand, Louisville; H. C. Kleymeyer, Evansville; A. H. Schneider and Arthur Schneider, of Nicholasville; J. Crow Taylor, Louisville; A. W. Williams, Louisville, Brick and Clay Record.

Bring Connecticut Brick Into New York Market in Effort to Lower Gotham Price

MASON MATERIAL DEALERS of New York will co-operate with leaders, builders and equipment interests and go as far as other building trades will go in helping to make the Samuel Untermeyer housing project a reality, says the Dow Service daily building report of January 28, 1922.

At the instigation of Mr. Untermeyer the Building Trades Employers' Association asked the building material dealers of New York if they would attend a meeting to be addressed by the counsel of the Lockwood Committee, with the purpose in view of participating in the co-operative plan to proceed with the $100,000,000 housing project.

To Supply Materials at Cost

While the conference has not yet been called, the basic building material dealers stand ready to supply brick, and similar commodities that they handle, at cost in order to bring about in any way possible a speedy solution of the shelter shortage in this community. All that remains to put the building material dealers into active cooperation in this project is the formal acceptance of their offer, according to the committee appointed to represent the dealers in the conference.

A price advance of $2 in the price of Hudson river common brick has been reported, which is now listed at $17 wholesale, dock, N. Y.

No doubt exists that the price advance in this basic commodity is due to a momentary shortage of brick in the wholesale market with supply cut off from every other source excepting by rail. There were only eight barge loads left in the wholesale market unsold on Friday and Raritan brick distributors withdrew all quotations because the waterways from New Jersey brick centers were closed tightly by ice. The Hudson at the week-end was closed down as far as Yonkers with no prospect of a new supply coming in until mild weather breaks up the ice barrier.

Bring Brick From Connecticut

A number of basic material dealers, in an effort to combat the manufacturers' price advance, brought common brick into this market by rail from points north as far as Cohoes and vicinity as well as from Connecticut.

While the usual estimates of available supplies of common brick up the Hudson have not been given out this year, the trade believes that there is stock enough burned or ready to be burned in the up-river districts to take care of almost any reasonable building construction activity this spring without forcing prices permanently above recent levels. The real pinch in brick supply is expected to come later in the year when building construction fully gets under way. Present building construction schedules, as reported from day to day, indicate something quite out of the ordinary in the way of building material requirement. Should this demand be met by a diminished supply resulting, for example, from a shortage of coal this spring, late builders may find themselves forced to pay delivery premiums, if not actually higher market prices, or both.

* * *

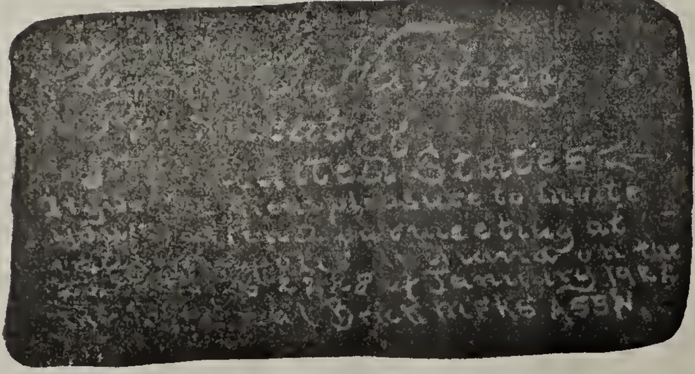
Veteran Association Rounds Out Its Thirty-Sixth Lap

THE TIME has come to record the passing of another annual meeting of the National Brick Manufacturers' Association. The occasion was the thirty-sixth convention of the organization which was held January 25 to 27 at the Claypool Hotel, Indianapolis, Ind.

This convention was unique, among the many that have been held in that a special invitation was presented to President Harding at the White House on January 19 by Theodore A. Randall, secretary of the association. The president was very much pleased with the invitation which was in the form of a brick suitably inscribed. He examined it very carefully and thanked all, particularly Wm. H. Lucktenberg, vice-president and general manager of the Burton-Townsend Brick Co., Zanesville, Ohio, who made and inscribed the brick. Said President Harding: "I am especially pleased because early in life I worked on a brick yard as an offbearer."

Follow Custom of the Ancients

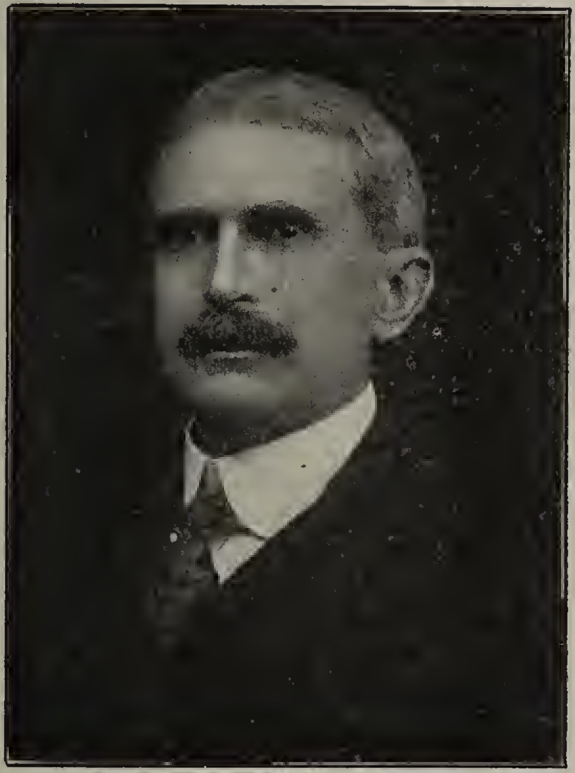
The invitation was made out of Zanesville hard blue shale, finely ground. It was molded by hand and inscribed with an ordinary pen and burned in one of the company kilns at a temperature of about 1,900 deg. F. To dry the brick,



The Unique Invitation to Attend the N. B. M. A. Convention Which Was Extended by Wm. H. Lucktenberg of the Burton-Townsend Co., to President Harding.

preparatory to setting, required about two days, then to burn and vitrify it took about seven days. After this, six days were consumed in cooling the kilns before it was possible to take the brick out.

Among the many papers that were read at the convention, that of "Heavy Clay Products," by Ross C. Purdy, secretary of the American Ceramic Society, is worthy of mention. More concerning the plans of the society on this particular subject will be presented in the columns of this publication from time to time. Important progress is being made in interesting manufacturers of structural clay materials in research work concerning the manufacture of their own produce.



THOMAS E. WILSON.

Spray Stain on Brick to Change Face

Considerable interest was manifested in "The Transmogrification of the Common Brick," by Major E. Gates, of the American Terra Cotta & Ceramic Co. Major Gates illustrated his talk with several samples of seven different kinds of common brick which had been stained by spraying a thin slip or glaze on the brick and then burning them. The idea back of the experiment was to show the possibilities of developing a low-price facing brick out of commons. A great deal of discussion was promoted by Major Gates' talk which brought out some interesting points.

First, it was agreed that the idea was not by any means a new one. There were several present who had made similar experiments with varying success.

Second, there was considerable question as to the practicability of so treating common brick from an economical standpoint. The best results, upon testimony of some of the men present were obtained when the brick were sprayed after having been taken out of the dryer. This meant additional handling and probably a prohibitive labor cost.

The salability of a product of this character is also a great question, altho there were some present who felt that it would have a wide sale if it could be manufactured economically.

Frank D. Chase, a well-known engineer who has become interested in the clay products industry, read a very forceful paper on "Engineering as Practically Applied to the Brick and Tile Industry." It is the intention to publish this paper in full in a later issue.

Road Drainage Important

George H. Krick, of Decatur, Ind., described the installation of a rotary dryer and roll hammer crusher to successfully reduce surface clay that contains a large percentage of lime, so that the bad effect of the lime will be eliminated. The clay is ground to 14 mesh and stored in a large building with reinforced sides.

Will P. Blair's talk explained the necessity of placing lines of drain tile beneath the foundation of any road bed, as it has been determined that 75 per cent. of the causes of failure of any road bed is due to the presence of water in the ground directly beneath the foundation proper. He stated that this lack of drainage accounts for the excess repair items for many types of roads.

Some very fine motion pictures of the Bradford Brick & Tile Co.'s remodeled plant were shown under the direction of W. S. Kupfer, of the American Dressler Tunnel Kilns, Inc. H. B. Hall, of the American Appraisal Co., read a timely paper on the "Importance of Proper Appraisal of Clay Plants." Mr. Hall has written in an illuminating and interesting manner on this subject in the December 27 issue of Brick and Clay Record.

The description by R. C. Penfield, of the American Equipment Co., of New York, of their new machine and equipment to make soft mud building brick without any hand labor in any department of the plant, as the brick are made, dried, hacked, set and loaded by machines, was of considerable interest.

Demonstration of New Trowel

A demonstration by O. F. Mann, 4309 Central Avenue, Indianapolis, of a new type of trowel to increase the production and reduce the cost of laying brick, was given. This trowel is shaped somewhat like a sugar scoop, except that the sides are flat surfaces. The scoop-like trowel is filled with mortar and inverted when putting the mortar on a course of brick in the wall. When the trowel is drawn away it leaves a bed of mortar for the next course of the desired width and thickness. This trowel will probably reduce the cost of laying up a brick wall if the masons can be shown a benefit and induced to use it. However, it does not eliminate the use of the plumb line, which, of course, is the major problem in laying brick.

Several other papers were read, both valuable and interesting, which will make a part of the permanent proceedings of the association.

Several notable persons addressed the banquet held on Thursday evening. Honorable Albert J. Beveridge, ex-United States Senator, showed wonderful ability as a toastmaster. Edward Jackson, Secretary of State, spoke on Hoosierdom. Mayor S. L. Shank, of Indianapolis, detailed many of his own experiences in his talk about Indianapolis. Colonel Alvin M. Owsley, of the American Legion, had the distinction of being the only man on the program who was not a Hoosier, since he hails from Texas.

The program closed with a short talk by Rev. Frank S. C. Wicks, of Indianapolis, on the "Home Builder," and a recitation by the well known William Herschel, of Indianapolis, of several of his poems, which were full of human interest.

Thomas E. Wilson, of Pittsburgh, was elected president of the association for the coming year, displacing W. E. Dunwody, of Macon, Ga., who retires. The second and third vice-presidents were moved up as usual, while a new member of the executive committee in the person of Douglas F. Stevens, of the Acme Brick Co., Cayuga, Ind., was elected in the office of third vice-president.

248 men were registered at the convention, according to the latest printed roster, of which 143 were clay products manufacturers.

The Building Situation

CONTRACTS for building work in the New England district are advancing rapidly to $4,000,000 a week and over, and the past fortnight has shown a marked improvement in this direction. The totals exceed the 1921 figures from $1,000,000 to $2,000,000. The construction awards in this section in December totaled over $26,000,000.

In Boston, the volume of work reached close to $2,500,000 in December, as compared with $683,000 in the corresponding month a year ago; Fall River, $397,000 as against $110,000 in December, 1920; and Springfield, $310,000 as compared with $121,000. The year's building in the Boston district approximated over $24,000,000.

Material Prices Firm

Common brick is selling for $17 a thousand, delivered, in the Boston market; New York selections are priced at $18, while good grade Connecticut common is selling for $21 on the job. Regular water-struck material, kiln run, is quoted by the New England Brick Co. and other local dealers at $30, and selected stock, $32 a thousand. Fire brick is $60 and $70, delivered, according to grade.

Vitrified sewer pipe ranges from $10.80 per 100 feet upwards, according to size. Both three and four inch stocks are at the level noted, while five and six inch are at $16.20, and eight inch, $25.20 per 100 feet.

Hollow building tile, four inch, holds at $96 a thousand, with 8 and 12 inch material selling in carload lots at $182 and $248, respectively.

At Providence

Good hard common brick at Providence, R. I., are being sold at $23 and $24 a thousand, with lesser grade material priced at $20 and $22. Water-struck material is around $35, while rough and smooth texture face brick is $55 and $60, on the job. Fire brick, No. 1 standard, sells from $70 to $90, regularly, according to character of material, while very high grade refractory stock brings $100 on special order. Vitrified paving blocks, 3½ inch are at $50 and $52 a thousand.

Partition tile, 4x12 inch holds at $160 a thousand, delivered, and 8x12 inch, at $270. Drain tile, three inch, is $12 per 100 feet, and four inch stock, $16. Sewer pipe, single strength, is 40 per cent. off list.

Brick Leads New York Building Market

From 1921 accurate building records at New York, now available, it is shown that brick is easily the leader over all other types of materials in the construction industry in the Greater City. New one-family brick dwellings in the Borough of Brooklyn reached a total of $10,554,290 in valuation, comprising 1,243 such structures, in the year, as compared with 437 dwellings of the same type, valued at $3,721,100 built in 1920; 496 brick tenements were erected in this borough during 1921, with valuation placed at $33,152,500, while store buildings and two-family brick houses aggregated $11,247,500, as against $1,521,000 for the latter in the preceding year.

In Queensborough, a total of 786 brick dwellings were built in 1921, valued at $8,209,600, an increase of over $3,000,000, as compared with the previous year. Brick tenements reached $5,546,500 in valuation, while combination brick store and tenements totaled $2,803,100; work of this character only attained a little over $2,000,000 in 1920. Combination brick stores and dwellings built in this borough last year were valued at $4,260,050. In the Bronx, brick dwellings of all kinds to an amount of $8,450,000 were constructed last year, while in Richmond borough, the smallest of the city districts, 196 brick homes were erected at a cost of $1,273,200.

Brick Prices Advance

The price of common brick in the New York market has shown a sharp rebound during the past fortnight. From $14 and $14.50 a thousand the figure advanced to $17. Despite the fact that lower sales prevail, manufacturers hold to the opinion that the $17 figure is the right one, considering production and distribution costs. Only about nine to ten barge loads of material remain unsold at the New York docks. Dealers are asking $19.50, delivered.

Interior partition tile, 2x12 inch, is priced at $120, per thousand square feet; four inch stock is selling at $170, and six inch, at $190. Fire brick is quoted at $75 for good grade No. 1, on the job. Face brick holds at $45 to $55, both for smooth and rough texture material.

Good Construction in New Jersey

Newark building operations are now reaching a total of about $200,000 a week, a fair record considering the season of the year and the dearth of industrial work. Brick dwellings and garages take the lead in current activities.

Practically all cities in northern New Jersey show increased construction figures for December work, from complete figures compiled by the various building departments. These include Bayonne, Hoboken, Elizabeth, Paterson, Orange and Passaic. At South Orange, all construction records were broken in 1921, the year piling up an aggregate of $3,486,790, mostly for residential work, an increase of over $1,500,000 as compared with the previous twelve months.

No Change in Material Prices

There is no important change in the price of common brick in the different prominent New Jersey cities. At Newark, prices run from $18.50 to $20; at Paterson and Passaic, $19, delivered; at Jersey City and vicinity, $19.50, with Hudson River stocks quite plentiful. At Morristown, the average is $20 and $21, on the job. In the Hackensack district, kiln prices are quite firm at $17 for first grade material, with salmon varieties around $14.50.

Trenton producers are selling brick at $17 to $18, delivered. Operations are at a low point and but little new brick is being brought into the market. Some of the yards are doing a little preliminary work, with view to commencing 1922 operations at the earliest date.

Trenton fire brick manufacturers report an increased call for material from the potteries, and prices are ranging from $75 to $85 for the majority of sales.

Construction Increases at Philadelphia

The record for December in Philadelphia shows over 50 per cent. increase as compared with the corresponding month of a year ago, the figures standing at $3,070,500 and $1,450,000, respectively. Brick dwelling work is taking more than an average proportion of the operations, and leads over all other construction.

Other cities in the eastern Pennsylvania district are recording notable increases over the construction totals of a year ago, including Bethlehem, Easton and Wilkes-Barre. From a low point of $1,200 in December, 1920, Bethlehem shows a growth to over $37,000, and Easton, from $36,000 to $96,000 in the two respective months.

In the wholesale market, common brick at Philadelphia is quoted at $16 and $16.50 for best grade stock, with salmon material about $3 to $4 lower. Delivered, the current price holds at $17 and $17.50.

Fire brick maintains at $75 a thousand, and face brick from $40 to $50, according to selection. Hollow building tile, four inch size, is selling at $130 a thousand in cargo lots, with 8x12 inch stock priced at $230, and ten inch around $300. Smaller quantities are bringing a slight advance in these figures.

Baltimore Progresses

Accurate estimates for December building work at Baltimore, Md., show a total of $1,034,000, covering 866 structures. The majority of operations covered two-story brick dwellings, with industrial work assuming more prominence than in many previous months past.

At Baltimore, common brick varies from $19 to $21 on the job, while the wholesale market quotes close to $19 for cargo material. Local producers are asking $29 and $30 for water-struck varieties, while regular rough and smooth texture face brick is selling for $45 and $50.

Hollow building tile holds at recently established levels, with four inch stock selling for $150 a thousand, eight inch, $250, and 12x12x12 inch, $400, in carload lots.

Bricklayers at Baltimore are receiving $1.25 an hour, and this figure seems likely to prevail for some months to come. Mention has been made of a decline but no definite action taken. Hod carriers are scheduled at 75 cents an hour, and masons at $1.25: plasterers are also receiving this latter figure, while plasterers' helpers are getting 75 cents an hour. Common labor is being paid from 30 to 40 cents an hour. Tile setters have a schedule of $1, and carpenters, 80 cents.

Pittsburgh Heading for Building Boom

The fact that there are more men out of work in the Pittsburgh district than ever before in its history is no indication of the immense building boom which is scheduled to hit here as soon as severe winter weather lets up. There are more building projects contracted for right now than ever before in the history of Pittsburgh. With the gradual settlement of trouble between the contractors and the labor unions, the Construction Employers' Association announced that $14,500,000 building work is now under way or about to be started. All labor unions in the building trades are entering into agreements running up to March, 1923.

Pushing "Build Now" Campaign in Columbus

Considerable progress has been made in the past two weeks in pushing the "build now" campaign in Columbus. The campaign which is being backed by E. P. Tice, former president of the Columbus Chamber of Commerce, is being supported by various business and civic organizations, including the Columbus Builders' and Traders' Exchange, the Columbus Real Estate Board, the Columbus Chamber of Commerce, Columbus branch of the Institute of Architects and others. Mr. Tice calls attention to men who are planning smaller building projects to get started early in order to permit those having larger projects a freer hand in starting later in the year. A lot of large building work in Columbus is assured for 1922, including four large high school buildings, several large structures at the Ohio State University, some work on the Ohio State Fair grounds and several office building projects.

Labor May Halt Cleveland Building

The expiration of the wage agreement between the Building Trades' Council and the Building Trades Employers' Association is the chief obstacle confronting the building industry in Cleveland. Millions of dollars' worth of construction is waiting to be started this spring but unless an agreement is reached there is a strong possibility that the expected boom will be long delayed.

As yet no definite basis for compromise has been suggested by either side, altho the Building Trades Employers' Association, which is in a process of reorganization under the direction of E. F. Hauserman, of the F. Hauserman Co., the new president. Mr. Hauserman has appointed a committee to make an exhaustive survey of conditions elsewhere upon which the employers will base their attitude.

Once this matter is out of the way a season of prosperity is certain, leaders in the building industry assert. The general belief is that indications have never been better. The controversy is expected to be over working conditions rather than wages, according to the employers, as a radical adjustment of wages is not looked upon as necessary in view of the prospects for the coming season.

Chicago Unions Accept Landis Award

William A. Curran, recently elected president of the building trades council in Chicago, has stated that the unions would accept the terms of the Landis award and go back to work. The only condition imposed upon the contractors by the labor unions was that non-union men now employed in the building trades be withdrawn. Carpenters, who have been the source of most of the trouble, have signified their willingness to return to work for $1.10 per hour, which is ten cents higher than the scale awarded by Judge Landis.

T. A. Donnelley, former chairman of the committee to enforce the Landis award, said, "There will be no compromise. The trades now on the open shop basis will remain that way." 65 per cent. of the carpenter work in Chicago is now being operated on an open shop basis.

The whole situation seems to reflect a strong desire on the part of the unions to get matters settled, restore the public confidence in the building situation and prepare for considerable building which is "hanging fire" pending a settlement of the controversies.

Memphis Completes Big Year

The recent report for 1921 building at Memphis, Tenn., by Building Inspector Dan Newtow to Commissioner Horace Johnson shows 3,800 permits of all classes with a valuation of $9,377,025. The year most nearly approaching this aggregate was 1919 with a total of $7,518,950. Some idea of the 1921 classification is found in the following figures: Apartment buildings, $933,600; dwellings, $3,866,340; public garages and auto stations, $158,500; industrial buildings, $121,800; amusement buildings, $123,400; warehouses, $175,440; public buildings, $182,200; schools and colleges, $588,000. The showing in brick buildings was excellent. Tile and terra cotta work also showed up well.

In Birmingham

Clay tile for building purposes is becoming more popular than ever in Birmingham, Ala., and in the Birmingham district. According to builders and contractors a number of tile buildings will be erected here during the coming spring and summer. Some of these will be large structures, while others will be smaller, according to contractors.

A $300,000 city auditorium, the contract for which has been under discussion for a number of months, will be built this coming spring and summer. Birmingham is spending something like $300,000 in the erection of a number of school buildings.

The clay pipe works in North Birmingham has been operating steadily on full time and with a full force, regardless of the wave of financial depression which has swept the country.

Atlanta Totals for January High

In Atlanta, Ga., building permits issued during January in point of total value of construction involved exceeded $1,000,000,

(*Continued on page 230.*)

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

WHERE ZIRCONIUM IS OBTAINED—ITS PROPERTIES AND USES

ON ACCOUNT of various mysterious properties and uses that have been attributed in the popular mind to zirconium, it has at times been styled "the mystery metal," says the United States Bureau of Mines. An investigation regarding the preparation and uses of metallic zirconium and its salts has been conducted by the Bureau of Mines, and the results have been made public.

The compounds of zirconium have numerous important uses and more uses will doubtless be found. Investigations in recent years have indicated that sintered or coherent zirconium metal is very resistive to acids; that it can be used for electrodes, and it probably will find metallurgical uses. A steel containing zirconium has been proposed for use in armor plate and automobile parts, and nickel-zirconium alloys have been suggested for high-speed cutting tools and for cutlery. Numerous articles in scientific journals have recommended the use of zirconium oxide as a refractory, an abrasive, a pigment in paints, and as an opaquing agent in enamel ware. The salts have been used in the textile industry as a mordant or dye-fixing agency, and also for weighting silk.

Zirconium Absolutely Non-Poisonous

Zirkite fire brick are used for furnace lining as well as for other purposes where a refractory having a low coefficient of expansion, high melting point, and maximum resistance to slag corrosion is demanded. Altho zirconium oxide has not proved satisfactory for gas mantles nor for arc lamps, it has been used for polishing powders, insulators for both heat and electricity, and with fair success in the Nernst lamp. Being absolutely non-poisonous, zirconium oxide is finding a use in paints and lacquers, where its resistivity to physical and chemical agents is proving highly valuable. As an abrasive, zirconia, zirconium silicide and zirconium carbide are suggested for a variety of uses, the carbide particularly as a substitute for the diamond in cutting glass. Zirconium oxide, because of its non-toxic nature, is used in place of bismuth, nitrate or carbonate in Roentgen-therapy. It is also said to have some medicinal value. Zirconium oxide and nitrate have been suggested for use in the extraction of oxygen and nitrogen from the air. There have also been statements to the effect that the oxide may find use as a filler in the manufacture of rubber goods.

In flash lights, amorphous zirconium, mixed with certain oxidizing agents, burns with a bright light; but it is doubtful whether the metal would be cheap enough to use in place of the usual material. Coherent white zirconium metal, on account of its acid-resisting properties, has been suggested as a substitute for platinum in certain cases. Its alloys have been suggested in the manufacture of rust-resisting apparatus. Crucibles prepared from zirconium oxide were proved in the experiments of the Bureau of Mines to be superior for high temperature work to any crucibles procured on the market.

Best Zircon Deposits in South

Zircon is found in considerable amounts in many placer deposits derived from disintegration of granitic and pegmatic rocks. The best-known deposits in the United States are near Green River, Henderson County, N. C., and in the Wichita Mountains, near Cache, Okla. Zircon is found most abundantly in certain syenites of Norway, and occurs in crystalline limestone at Grenville and elsewhere in Canada. Dana states that zircon occurs in various localities in North America, including Litchfield, Md.; Essex County, Orange County, and in St. Lawrence County, N. Y.; near Reading, Pa.; abundantly in the gold sands of Burke, McDowell, Polk, Rutherford, Henderson, and other counties in North Carolina; with astrophyllite, and so forth, in the Pikes Peak region in El Paso County, and at Cheyenne Mountain, Colo. In California and elsewhere it occurs in gold-bearing gravels.

Baddeleyite (brazilite) is found in large deposits in Sao Paulo, Brazil. This mineral has also been identified in Ceylon, Sweden, Italy, and Montana. Samples of zircon sand from Pablo Beach, Fla., have been investigated, and recently as much as three per cent. of some of the auriferous sands of Idaho has been found to be zircon mixed with some monazite.

Mining Zirconium in Brazil

In Brazil, which is an important source of industrial ores, it is difficult, owing to the hardness of the ore to drill holes for explosives, and in handling large amounts resort is had to quite primitive methods. A large fire is built against an exposed face of the ore and kept burning for several hours, at the end of which time water is thrown upon the ore, which produces fracturing of the mass, permitting it to be sledged into pieces easily handled by one man. Most of the mines are many miles from the railroad. Horses for other than saddle purposes are practically unknown, and the ore is transported to the railroad station by oxcarts carrying about one ton each. These carts are of the crudest character, having large, solid, wooden wheels, some four feet in diameter and six inches in thickness. From 20 to 30 oxen are generally required for each cart, owing to the mountainous roads.

The results of the investigations of the Bureau of Mines are available in Bulletin 186, "Investigations of zirconium with especial reference to the metal and oxide," by J. W. Marden and M. N. Rich, which is distributed by the Superintendent of Documents, Washington, D. C., at a price of 25 cents.

* * *

1922 WILL BRING BUSINESS

Unless signs fail, and there is no indication at this time that they will, generalware potteries of the United States will be in a position to operate full time during the first six months of the new year. It is just a little too soon to anticipate the situation for the second and third quarter of 1922, but, several of the larger dinnerware manufacturers have said, "we can see enough business in sight to insure the steady operation of our plants during the whole of 1922."

There will be a lot of dinnerware buying when the season opens at the Ft. Pitt Hotel, Pittsburgh, Pa., in January, and at the same time buyers will rush to the factories in the East Liverpool district. Then in February, there will come the new Chicago Pottery Exposition, which will be arranged in the Hotel Morrison, Chicago. The latter is an added selling proposition, and has been arranged for the convenience of the southwestern, western and northwestern trade. This Chicago Exposition is bound to give the pottery salesmen a lot of new accounts.

Those buyers who have been in the East Liverpool market of late have declared they have no stocks. "We could not fill an order, no matter how small," one jobbing interest declared, who caters to trade in the coal fields. Other department store buyers and jobbers tell the same story about scarcity of stocks.

Therefore, all signs point to the steady operation of the generalware potteries of the country. Operations during November and thruout December have been practically on normal schedules. There has been a noticeable absence of cold weather, and therefore there has been no full scarcity.

Many new decorations are arranged on the plain and festoon dinner shapes, borders predominating on the plain shapes and the spray treatments on the latter shapes.

* * *

BRITISH REDUCE WAGES

English pottery workers have accepted a reduction of "two 10's" in their wages, the first ten per cent. off now being in effect and the second ten will become effective as of February 7, 1922. The second reduction will remain in effect according to the agreement between the manufacturers and the employes until March, 1923.

This reduction is in marked contrast with that agreed upon between the Labor Committee of the United States Potters' Association and the Executive Board of the National Brotherhood of Operative Potters. The existing agreement provided a reduction of first ten per cent., then in November last there was another reduction of seven per cent.

English pottery manufacturers, according to private advices received in the East Liverpool, Ohio, district have been complaining bitterly about the lack of new business, and they hoped that by a reduced selling list, in which the wage reduction would be reflected, that it would prove a stimulant to trade. As the situation now stands, more English-made ware is being received in the United States than from any other country exporting ceramics to America.

* * *

GEORGIA CLAY TESTS PROGRESSING

While the experiments and tests being conducted under the direction of the United States Bureau of Mines at Columbus, Ohio, to determine the availability of clays produced in Georgia for the manufacture of pottery, porcelains, refractories, and so forth, are as yet far from complete, it has been announced by the Central of Georgia Railway that enough has been already accomplished to indicate that there will be extensive development of the industry in Georgia thru the finding of new fields for the utilization of southern clays.

* * *

INVESTIGATING SOUTHERN CLAYS

Extensive experiments and investigations of the mineral resources of the South are being carried out by the new Southern experiment station of the United States Bureau of Mines, at Tuscaloosa, Ala., under the direction of Dr. W. Crane and W. M. Weigel, the latter well known as a mineral technologist and connected with the laboratories at Tuscaloosa.

One of the most important of these minerals being investigated is white clay, of which Georgia and South Carolina are at present the chief producers, tho there are also extensive deposits, as yet largely undeveloped, in Alabama and other southeastern states. While some clays are pure enough so that they only need be dried and ground into a fine powder, there are others that have to be both washed and water floated to rid them of sand and other impurities.

It is stated at the Southern station that while more than half the white clay now consumed in the United States is imported from England, there are ample clay resources in the United States of proper quality to supply the demand if rightfully handled and treated to meet the demands of the manufacturers.

One of the important problems that the Southern station of the mine bureau hopes to solve is the proper treatment of domestic clays.

* * *

NEW OFFICERS OF POTTERY ASSOCIATION

A banquet was held in conjunction with the annual meeting of the Western Pottery and Glass Association on January 28. The election resulted as follows:

President, James M. Lewis; vice-presidents, William C. Lynch, E. V. Ebberta, Frank I. Simmons and Reuben Hall; secretary-treasurer, Mr. Lang. Territorial vice-presidents are: New York district, D. King Imrio, Lee Schoenthal and Harry W. Witing; Chicago, William T. Dardus, E. M. Meder and R. E. Reineck; Philadelphia, Alexander Frazier and C. E. Taylor; Los Angeles, J. T. Jacobson, and Baltimore, Harry Thomas.

* * *

STUDENTS VISIT EXHIBIT

Samuel Augustus Weller, prominent pottery manufacturer of Zanesville, Ohio, had as his guests during the exhibition of his products at the annual art and pottery show in Pittsburgh, many students from the University of Pittsburgh and the Carnegie Institute of Technology who are studying the art of pottery designing. Origin of the new designs and process of manufacture was explained by Paul M. Phillips, in charge of the exhibit.

* * *

SEEKS DISSOLUTION OF TILE MANUFACTURERS' CREDIT ASSOCIATION

The U. S. Government has filed action in the federal district court at Columbus, Ohio, seeking to dissolve the Tile Manufacturers' Credit Association. 37 firms and officials in eight eastern states are named as defendants.

The government charges in its suit that the Tile Manufacturers' Credit Association maintains price agreements whereby each member certifies in writing to a commissioner a list of prices which he agrees to follow, and several other practices which are a violation of the Sherman anti-trust law.

* * *

BUILDING TWO KILNS

From 12 to 15 pressers are to be employed by the Western Pottery Co., at San Pablo, Cal., when two additional kilns are completed. The company has awarded the contract for the erection of these kilns, and it is possible the improvement will be completed within the next 60 days.

* * *

TO BUILD $25,000 FACTORY BUILDING

The Oak Cliff (Tex.) Chinaware, Novelty & Pottery Co. has obtained a permit to erect a two-story factory building at 1104-06 South Betterton Circle. The new building will cost $25,000.

DEATH STRIKES J. W. YOUNG

Stricken suddenly, John W. Young, 78 years old, former pottery salesman and inventor of a machine for the manufacture of fancy wall tiles, died at his home in Zanesville, Ohio, January 24. Besides his wife he is survived by one son.

* * *

W. C. BROWNE JOINS CO-OPERATIVE CO.

W. C. Browne, for the last two years general manager of the Alliance (Ohio) Vitreous Clay Products Co., has severed his connection with that firm to become southern sales manager for the Potters Co-Operative Co., of East Liverpool, Ohio. He will have charge of the exhibit of this line at the Pittsburgh Pottery Exposition in January. George McNicol, western sales manager for this same firm, with offices in the Palmer House, Chicago, will have charge of the display of this firm during the Chicago Exposition, which is being arranged in the Hotel Morrison.

* * *

TO ERECT NEW KILN

The American Bisque Pottery Co., at Williamstown, W. Va., which is under the management of J. M. Grafton, formerly of East Liverpool, Ohio, and controlled by Columbus, Ohio, interests has awarded the contract for the erection of an additional kiln. This concern is manufacturing a line of art pottery novelties, the like of which is not duplicated in the United States. Its glazes are exclusive and it is impossible for the firm to obtain the same glaze effects on any two pieces. This is the novelty of the line. Their Agate glaze treatment is all that the name would imply. This company formerly manufactured bisque baby doll heads, but eliminated that line when it entered the novelty pottery business some months ago.

* * *

ORGANIZE TO MAKE MOSAICS

The Tile Shop, Inc., has been organized and incorporated at Portland, Me., with a capital of $10,000, all common stock. The company will manufacture tiles, mosaics, terrazzo floorings, composition floorings, and so forth. The officers are: President, Martha C. Frey, Portland; treasurer and clerk, George Frey, Portland; directors, the above two and John Turbi of Portland.

* * *

FLOWER POT DEMAND PROMISING

The Louisville Pottery Co., reports fair business, the flower pot line being active, while the stoneware line is holding up very well. The florists have had an unusually mild winter, operating costs have been small, and business good, with the result that the flower pot business looks promising.

* * *

OLD POTTERY BUILDINGS BURN

One of the old Kenney Pottery buildings in Pottersville, Fall River, Mass., was destroyed by fire January 9, the fire starting from the sparks of a grass fire. The building was erected some 50 years ago by the late Thomas Kenney and was used for many years for pottery manufacturing. Several other buildings of the group were saved by the firemen. Many of the buildings are now used as residences, having been remodelled after the discontinuance of the pottery business.

* * *

TO OPEN TEXAS SALES OFFICE

The American Clay Products Co., of Zanesville, Ohio, operating stoneware plants in Zanesville, Ironspot, Roseville and Crooksville, Ohio, together with the Knowles, Taylor & Knowles Co., of East Liverpool, will open a new sales office at 1151 Commerce St., Dallas, Tex., March 1, in Charge of Fred Kline.

Mr. Kline has been the southern representative for the Knowles, Taylor & Knowles Co. for a number of years. He is now at the factory, and will remain in East Liverpool until the close of the January buying season, when he will proceed over his southern territory. This will land him in Dallas about March 1, when he will open the new sample room, which will measure 50 by 75 feet. Both these concerns have large jobbing accounts in the south, and Mr. Kline will look after these particular interests.

* * *

EXHIBITS FINE POTTERY COLLECTION

The New York State School of Clay-Working and Ceramics, Alfred, N. Y., under the direction of Charles F. Binns, has placed an interesting pottery collection on exhibit in the rooms of the Society of Arts and Crafts, 9 Park Street, Boston, Mass. It shows the work done by students at the institution, under the personal instruction of Marion L. Fosdick, associate professor of modeling, and Clara K. Nelson, associate professor of design.

* * *

ORGANIZE POTTERY IN TRENTON

The Unitco Pottery Co., Trenton, N. J., has been organized under State laws with a capital of $125,000, to manufacture pottery and sanitary earthenware products. A local plant will be established. The company is headed by John Morgan, Joseph G. Denelsbeck, and William G. Amisson, Sr. and Jr., 77 Frazier Street, Trenton.

* * *

MAY BUILD MORE KILNS

Two additional kilns are being planned by the Horton Pottery Co., manufacturers of sanitary ware at Chillicothe, Ohio. Chris Horton, head of this corporation, was formerly manager of the decorating department of the Colonial Pottery Co., at East Liverpool, and still retains his interest in that corporation. He was also at one time city treasurer of East Liverpool, serving four years. The plant has a current output of three kilns, and was first built and used for the manufacturing of art pottery.

* * *

NEW CONCERN ABSORBS WILLETS POTTERY

The Willets pottery plant at Trenton, N. J., has recently been acquired by the General Chinaware Corporation, a new manufacturing concern. Machinery and equipment for the manufacture of dishes is being installed, and it is expected that operations will begin in a short time.

* * *

Certain classes of pottery, chiefly plates, cups and saucers, find a market in Java and Madura.

* * *

WILL MANUFACTURE NEW LINE

On account of heavy demands being made upon them, the Chelsea China Co., of New Cumberland, W. Va., will create a decorated line of vitreous china hotel ware. Heretofore the company has been featuring a white line only. Since this plant has been placed under the factory management of Herbert Goodwin, formerly with the Salem (Ohio) China Co., its production has been increased and the quality of the ware greatly improved. The sales department of this plant is under the management of Col. W. A. Rhoads, who has had a wide experience in the "dinnerware" game.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

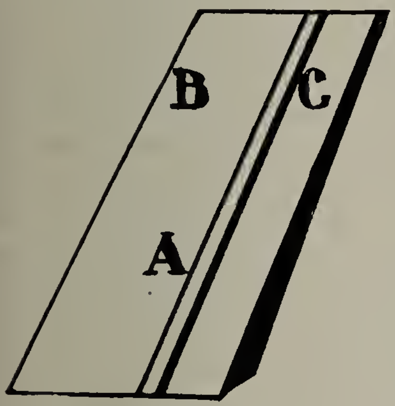
LUBRICATION OF WIRE ROPE

It is pointed out in "Lubrication" that a very important detail in the lubrication of wire ropes is the application of the lubricant. Various methods have been employed, and in adopting any one method or combination of methods the particular mode chosen must be dictated by the specific problem encountered. On inclined and horizontal ropes, where operating speeds permit, operators very often pour the lubricant on the rope, the excess being caught in a pail, which serves the double purpose of container and overflow vessel. It has been found excellent practice to paint the lubricant on with a brush, catching the surplus, as before, in a pail. Good results have been obtained by providing each rope with a trough thru which the rope is compelled to pass by making it run under a wheel mounted on the trough. Another device consists of a barrel fitted with steam coils, to insure a proper heating of the product, and a valve and short piping arrangement for furnishing a continuous flow of the lubricant to the rope, suitable means being provided for wiping the cable and conserving the excess dressing. Engineers report good service obtained by pouring the dressing on the winding drums. Others report that they have obtained best results by providing each rope with a split box of some 25-lb. capacity into which compounds can be poured while hot and thru which the rope passes in operation.—*Power.*

* * *

ELIMINATING TOSSING LABOR

The attached views show a method of emptying round down-draft kilns with a minimum of labor. This method is used in paving brick plants, and the sketches show its adaptation in the fire brick industry. The runway consists of three inch lumber approximately 40 or 48 inches wide, depending on the width of the door. The length is not less than 16 feet, and should be as great as possible.

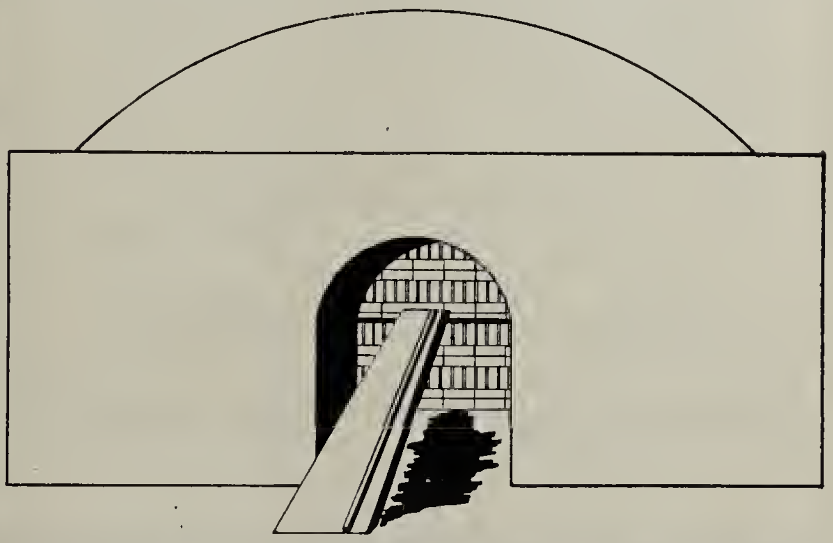


Sketch Showing the Proper Location of the Wheel and Wheel-barrow Legs in Coming Down the Runway.

On one side of the center of this runway a cleat about three inches square is fastened as shown. The small sketch shows the location of the wheelbarrow as it comes down the runway. The wheel is at A and the two legs at B and C. The secret of using this is to place the wheelbarrow so that the wheel will bind on one side of this cleat and the leg at C on the other side. If the wheeler is careful and operates this properly, these two points can act as a brake and the wheelbarrow can be stopped at practically any point.

The end of the runway inside the kiln is placed on top of the lower bench, usually 15 or 16 brick from the floor. At the point where the runway passes thru the door or wicket, there must be enough room for the wheeler to pass beneath the arch. For this reason the distance at which the runway can be used is variable. In some cases if the doorway is high enough, it can be used as soon as two or three benches have been removed, and in other cases practically one-quarter of the kiln must be taken out before the runway can be installed.

The benefit gained is the reduction in the labor necessary to move the brick of the upper bench, since each wheeler can take off and place on his wheelbarrow all of the top bench just the same as the lower bench, without the additional labor of tossing.



View of Installation of Runway from Top of Lower Bench in Down-Draft Kiln. Its Use Eliminates Tossing of Brick from Upper Bench.

The runway must be supported about the center of the 16 foot length. There must also be good provision to prevent the runway from sliding forward. The best way to do this is to place a board across the door on the inside of the kiln wall and to fasten the runway securely to this cross piece.

* * *

GETTING DOWN CLAY IN WINTER

Clay products manufacturers are finding that a little dynamite saves a lot of time and labor when it comes to getting down frozen clay.

Charges are placed somewhat the same as in quarries. A row of vertical holes is put down to pit floor grade, a few feet back from the face. The amount of dynamite used depends on the height of the face; usually the holes are about two inches in diameter. The sticks of dynamite are dropped down them, so that resting end on end, the bore hole is filled to within one to three feet of the top; the hole is then tightly tampered to the surface.

It is advisable to use electric blasting caps and blasting machine to fire the charges, because the cumulative effect thus obtained produces better results than is possible when holes are fired one at a time with cap and fuse.

In a recent test in a clay pit, one man working as described was able to get down as much clay ready for loading on wagons as six men working with picks could do.

Electric Motors and Generators

for all requirements of the

Brick and Clay Industry

BURKE ELECTRIC CO.
MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

Service-Sales Offices
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PITTSBURGH DETROIT BUFFALO

Sales Agencies
CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

Three Brick Plants are already established along the Pittsburgh, Lisbon & Western R. R. and the clay supply is inexhaustible.

The territory along this railroad is one of those unusual feats of nature, which seems to have been planned expressly for the benefit of mere man. Here, lying together, one on top of the other, are the two substances which are paramount in the manufacture of clay products.

First layer—4 to 20 ft. of red plastic clay, suitable for the manufacture of face and paving brick. Second layer—30 inch high grade bituminous coal, then another layer of high grade fire clay 6 ft. in depth, suitable for face brick, sewer pipe or tile.

This territory is an ideal location for brick plants of any size. Electric power and natural gas available. Shipping facilities are first class.

Write for full information,
analysis of clay, factory sites
and price of land.
No obligation.

Pittsburgh, Lisbon & Western R. R. Co.
LISBON, OHIO

Questions and Answers

Best Authorities in Every Clay
Working Branch Are Called Into
Consultation—Their Advice Is
Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

ELIMINATING LABOR IN CLAY HANDLING

1,022. *Illinois—We would like some information on some kind of mechanical method for handling the clay directly from dump carts to the pug-mill, to eliminate hand labor.*

A great deal would depend on the distance at which the dump is located from your pug-mill. We assume that you use no dry pans. If your distance is short, 15 feet or less, you might use an apron feeder. Thus you could dump your clay from the carts into a hopper and this hopper would then feed the clay gradually onto the apron feeder, which in turn would convey the clay to the pug-mill.

Another device which could be used and which would be practical even if the distance is long, would be to use a clay feeder which could feed the clay onto a conveyor belt, which in turn would convey the clay to the pug-mill.

⁂

CHANGING COLOR OF RED BURNING CLAYS

1,023. *Oregon—We would like information, if you can furnish any, as to how oxide of iron can be eliminated or counteracted in burning brick so as to nullify the effect of its reddening quality, leading toward the burning of our clay in buff, straw or white colors.*

In answering this question it is necessary to explain that clay is pretty much like a human being. It is stubborn and its characteristics are hard to reform. Just as it is hard to reform a burglar, thief or murderer, so is it hard to make a burglar, thief or murderer out of a high grade man. Similarly, it is hard to make a clay which naturally burns red, to burn buff; just as it is difficult to make a clay which naturally burns buff, to burn red.

The naturally buff burning clays are those which either contain very little iron, or which contain a great deal of lime that masks the color of the iron. Since your clay naturally burns red, it undoubtedly contains iron, hence the effect of this iron must be counteracted. This might be done by the addition of lime. You notice we say this might be done.

Lime frequently is an injurious character in clay, as you probably know, it causes scumming. However, when the brick are buff anyway, the scumming is not as important or noticeable. But you might try just as an experiment to mix some finely ground lime with your clay to the extent of about 5, 8, 10 and 12 per cent. and see what effect it has on some few experimental brick.

You might use a spraying machine to spray a coat of buff burning clay onto your regular brick in order to get a buff color. A terra cotta concern a year ago perfected a machine for spraying glazes onto terra cotta, and obtained a mottled effect. It has recently been suggested that this machine be used for spraying a compound onto brick to burn various colors.

Thus you could use a fire clay slip which could be sprayed onto your brick to a thickness of one-thirty-second to one-sixteenth of an inch, and the brick then burned in the regular way. Approximately 15,000 brick per day could be sprayed in this manner.

What you really need to get good buff burning brick is to obtain a fire clay or kaolin, and if there are any such deposits in your locality you might have it shipped to your plant to supply those customers who desire a buff brick.

The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

CORRECTING TYPOGRAPHICAL ERRORS

In the December 27 issue of Brick and Clay Record appeared an item in the department headed "Superintendent" under the caption, "How Much Can You Afford to Spend?" We have recently received a letter from J. B. Bain, 1020 Fairmont Street, Washington, D. C., which is published below, containing interesting comments and corrections.

"I am much interested in your article, 'How Much Can You Afford to Spend?' in your issue of December 27, page 1016.

"There are some points I do not understand, and some questions I wish to ask.

"Let D equal the saving on account of increased quality. You mean the daily saving, do you not?

"In applying the figures to the first formula, should not B equal .10 instead of .01? See

$$\text{"}K = 200 \times \frac{.01 + 1}{.06 + .05 + 12} + 300 = \$1{,}260$$

"Should not 12 be .12 instead?

"It seems to me that the application of the formula would be:

$$\text{"}K = 200 \times \frac{.10 + 1.00}{.06 + .05 + .12} + 300 = \$1{,}256$$

"Mistakes in setting up the type and in not carrying out the decimal 4.78, dropping off the second place, calling it 4.8, would account for these differences.

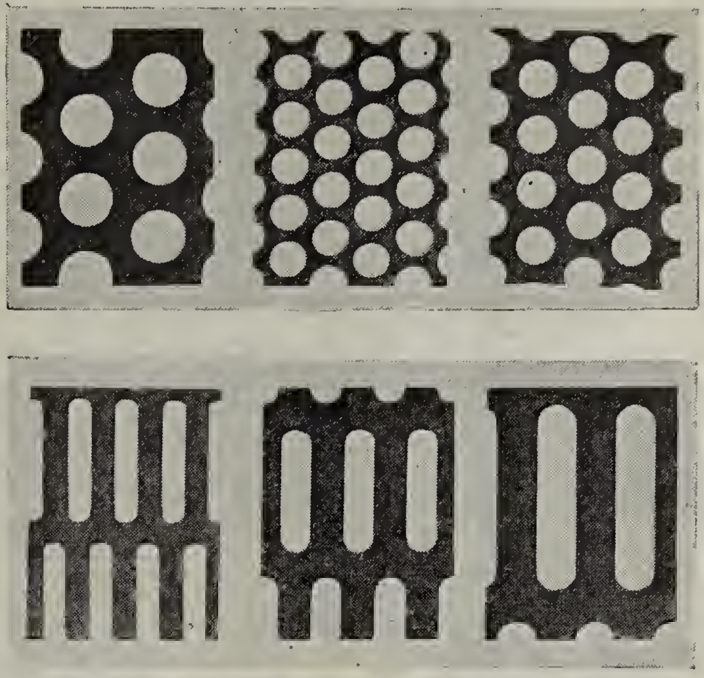
"How is .12 obtained for the value of H? If the kiln and stack will be torn down in six years, I would think the depreciation would be 16⅔ per cent. I note that .05 + .12 = 17 per cent., which is close to 16⅔ per cent., but it seems to me that the method of adding .05 to .12 is wrong in principle. If the stack will become obsolescent in six years, it does not matter if it will last for 20 years."

Mr. Bain is perfectly correct in assuming that the article in our December 27 issue contained two typographical errors. The value for B in showing the working of the formula should have been .10 instead of .01, and the value for H should have read .12.

The obsolescence value of H was arrived at in the following manner: The annual depreciation was figured at .05 and for the six years during which the stack would be used, this would equal .30. Subtracting this latter figure from 100 per cent. we find a balance of .70 that must be taken up by obsolescence. We divided this by six in order to arrive at an annual figure for obsolescence. It is true that this figure should have been .11⅔ but since a fraction in the divisor of the formula might have complicated the figuring, we took the closest full figure and used .12. If we had used .11⅔, then the total values for G and H would have been .16⅔, the same as his figure. Our figures showed an answer of $1,260. If worked absolutely accurately, using .16⅔, the answer would have been $1,247.

The line, let D equal the saving on account of increased quality, should have read the daily saving, as Mr. Bain suggested.

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.
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NEW YORK OFFICE: 114 Liberty St.

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

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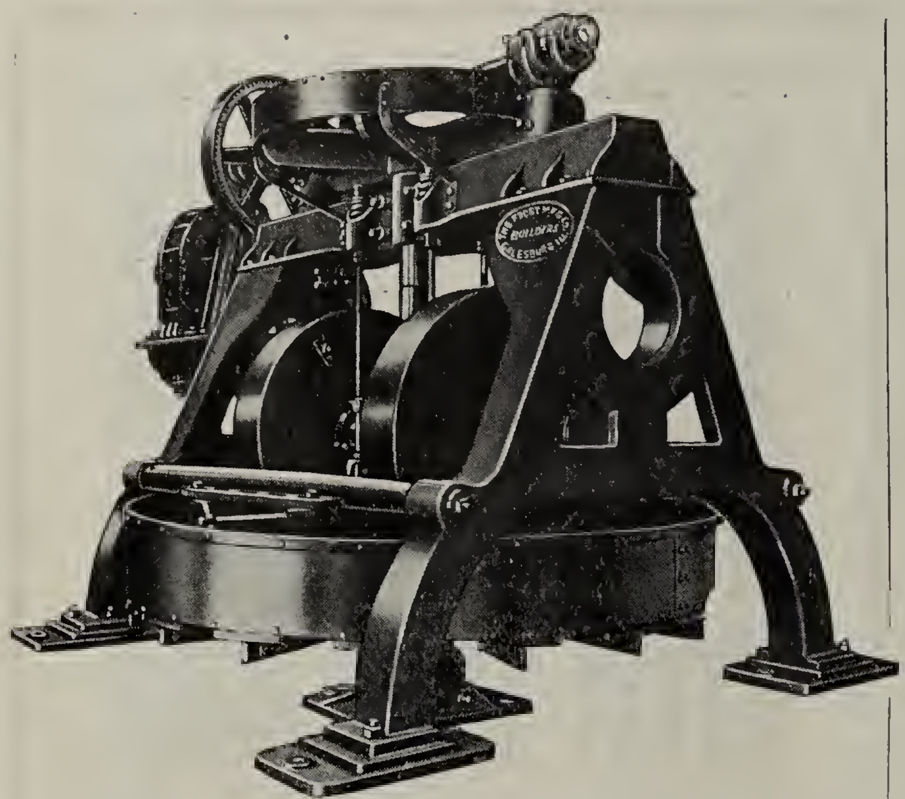

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That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

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THE FROST MFG. CO.
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ESTABLISHED 1851

With Your Spring Repairs Will Come Worries About

Kiln Banding

(Our Specialty)

We have KILN BANDS in stock for immediate delivery. Also can furnish them looped and punched and ready for erection.

TRY US!
for
Service and Workmanship unsurpassable—Let our 10 years' experience be your guarantee.

ALSO

We have Coal and Clay Cars in stock for Immediate Delivery.

GALLAGHER BROTHERS
Uhrichsville, Ohio

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

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HAND OF DEATH GRASPS S. R. WEIRICH

Samuel R. Weirich, 58 years old, of Massillon, Ohio, prominent for many years in the sand, silica and brick industry thruout the state is dead at his home here. At the time of his death he was affiliated with the Newman Silica & Sand Co.

DEATH TAKES A. T. LUCAS

Alfred T. Lucas, aged 58, died January 11 at his home in Houston, Tex. Mr. Lucas was proprietor of the Houston Brick Works and the A. T. Lucas Brick Works for the past 15 years. Previous to that time he was a prominent contractor, and many of the city's finest structures stand as monuments to his memory. Altho born in Nottingham, England, Mr. Lucas has spent the greater part of his life in this country, having resided in Houston for 55 years. A widow, two daughters, three sons and a sister mourn his loss.

LOUISIANA BRICK MAN DECEASED

A. Schnebelen, president of the Plaquemine (La.) Brick Yard, died on January 13, 1922. Mr. Schnebelen was president of that company since its organization in 1918. The plant has been in existence some 40 years, during which time he conducted its affairs. Besides his brick business, Mr. Schnebelen devoted a great part of his time to public work. He had complete charge of the roads in the community for a great number of years, and his work speaks well for him.

JOHN THELEN BURNED TO DEATH

John Thelen, formerly a brick manufacturer, was burned to death at St. Elizabeth Hospital, at Lafayette, Ind., recently. Thelen, who was eighty-one years old, had been a patient at the hospital for a year. He went into the smoking room, lit his pipe and dropped the match. It set fire to his trousers. He ran into a corridor with his clothing in flames and the Sisters of St. Francis hurried to his assistance. He died two hours later. Thelen, who was born in Germany, came to this country fifty-eight years ago and settled in Tippecanoe County, Ind. He operated a brick factory for many years. Two sons, Chris and Peter Thelen, live stock commission men, survive.

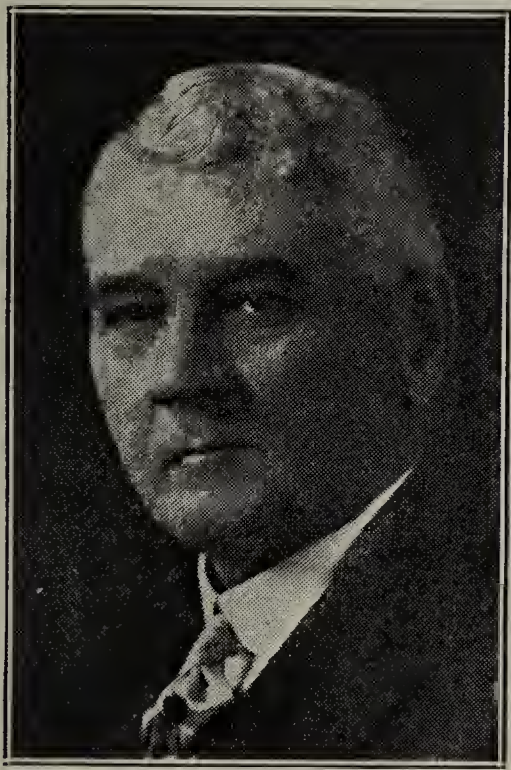
ANTON BERG, PROMINENT INVENTOR, DIES

Anton Berg, a prominent inventor in the clay industry, passed away January 24 at his home in Toronto, aged 66 years. Mr. Berg was born in Christiania, Norway, and received a thoro mechanical training in that city. He came to the United States at the age of 31 and joined the International Harvester Co. as inventor. About this time he became interested in the brick industry, and began to develop a brick press. His talents in this direction were noted by a prominent Chicago brick machinery company, who promptly secured his services.

In 1908 Mr. Berg established a factory in Toronto for manufacturing his brick press, where he employed as many as 400 skilled mechanics. Mr. Berg believed in close fellowship with his men and worked constantly for their benefit.

L. S. STRAIGHT DIES

L. S. Straight, president of the Adel (Ia.) Clay Products Co., died January 22 at Adel at the age of 61 years. Mr. Straight was connected with the clay products industry practically his whole life, having learned the first principles of clayworking at his father's tile factory at Fairbury, Ill. In 1882 he went to Manhattan, Ill., and there he and his brother, Willis, operated a plant for two years. Mr. Straight then moved to El Paso, Ill., where he owned a tile factory, lumber yard, and one of the first electric lighting plants in central Illinois. He remained there until 1894, and then moved to Fonda, Ia., and turned his efforts again to clayworking, with his brother Guy H. Straight. The two brothers operated this plant until 1907 under the firm name of Straight Brothers, and also one at Spencer. Later more modern plants were built at Auburn and Adel. The latter plant is now being operated with great success.



L. S. STRAIGHT.

BERRY MAKES NEW CONNECTION

C. W. Berry, formerly connected with the Laclede-Christy Clay Products Co., of St. Louis, Mo., has recently severed his connections with that concern and is now sales manager for the Grand View Fire Clay Co. and Mitchell Clay Manufacturing Co., both of St. Louis.

W. BIDLEMAN RESIGNS POSITION

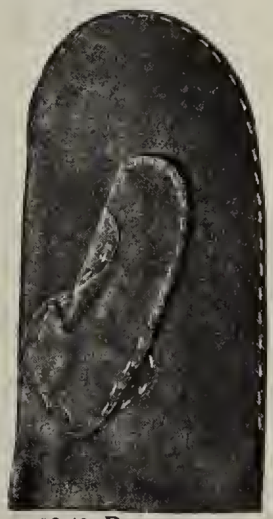
William Bidleman, who has been superintendent of the clay mine of the Wellsville (Mo.) Fire Brick Co., has resigned his position and will depart in February for Colorado, where he will reside in the future. Mr. Bidleman has been in charge as mine superintendent of the local plant for several years. It was largely due to his efforts that the first fire clay plant was established in this city and for that reason the business interests of Wellsville feel that they are much indebted to him, for the industry is now a large part of the industrial life of this city. He was active in the civic affairs of the city and one of the best liked men in Wellsville, so that his departure will cause regret there.

THE PROTECTION OF YOUR MEN'S HANDS MEANS PROFIT FOR YOU—

You probably don't realize the amount of time that is wasted in your plant by the men who handle your brick and tile.
You probably never even thought of the fact that when a man is constantly in fear of injury he works slowly and gingerly. BUT—Mr. Clay Products Manufacturer—if one of your men injures his hand YOU ARE THE ONE WHO PAYS THE DOCTOR BILLS. Remember "An ounce of prevention is worth a pound of cure."
Des Moines Gloves and Hand Pads eliminate all chances of injury and speed up the efficiency of your men.
Send for a trial dozen today.

Des Moines Glove & Manufacturing Co.
508 Fourth Street, DES MOINES, IOWA
Warm, fleece lined mittens made similar, sent on request at same price.

$4.50 Per Dozen
$50.00 Per Gross



$8.40 Per Dozen
$96.00 Per Gross

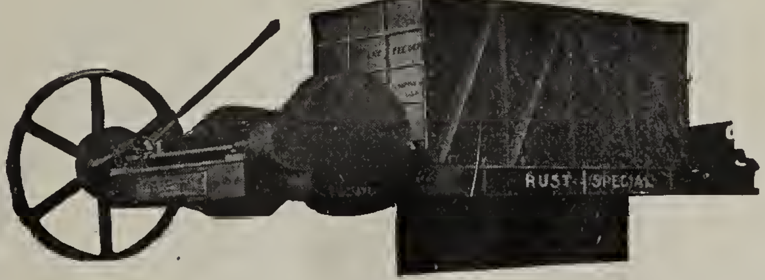
To Reduce Production Costs In Your Own Plant

The mere statement that Marion "Rust Special" Feeder-Mixers are satisfactorily used by others will not do your plant any good.

But, just as soon as you install a Marion and let it work for you in your plant, you will receive dividends in the shape of lower labor costs and better ware.

Now is the best time to start using the Marion, because 1922 is the year that every clay products manufacturer must reduce his costs.

Write for our latest catalog. It contains complete information on all Marion Equipment for clay plants



Marion Machine Foundry & Supply Co.
Box 395 Marion, Indiana

Measure Your Heat with

BRISTOL'S PYROMETERS

FOR greater economy and better burns, keep absolute record of your heat with Bristol's Pyrometers.

They indicate, record and help control temperatures up to 3000 degrees Fahr. May be used single or in combination.

Write for Latest Catalog. No Obligation.

The Bristol Company, Waterbury, Conn.

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Bulletins on Request

THE STEVENSON CO.
Wellsville Ohio

COVINA, CAL., TO HAVE NEW PLANT

Announcement that work would be started at once on a $375,000 tile plant at Covina, Cal., has caused rejoicing among the business men of that city. The plant will be located on the Chaffey ranch, where there is an abundance of high grade clay. The deposits were discovered by D. F. Meiklejohn, a mining engineer, who has organized the company in order to develop the project.

SACRAMENTO PLANT STARTS

The Sierra Clay Products Co., Sacramento (Cal.) has announced that it would start development of its clay deposits in the Truckee River Canyon east of Reno, in early January. The management states that a plant for the manufacturing of brick and tile is to be erected, and this will be followed by the installation equipment for the manufacture of pottery and other clay products.

INCREASING CAPACITY TO 30,000,000

30,000,000 annual capacity is the ambition of the Sacramento (Cal.) Brick Co. To this end the company is planning the installation of new machinery and equipment to include not only brick manufacture but also roofing material. The company has recently completed a large kiln which is proving a great aid in production. The company is now burning a stock of approximately 6,000,000 brick which have been manufactured and dried during the summer.

EXPECTS GREAT BUSINESS INCREASE

Mr. Glynn, of the N. Clark & Sons Clay Products Co., of San Francisco, states that the new year holds bright prospects for his company. There is a great deal of estimating going on, and Mr. Glynn has expressed his opinion to the extent that the demand for brick during the ensuing year will in all probability be far greater than it was for the year just past.

The plant of the company, located in Alameda, is now running to full capacity, after being closed down a considerable time for necessary repairs.

COMPLETE SATISFACTORY YEAR

At the annual meeting of the stockholders of the Fort Collins (Colo.) Pressed Brick & Tile Co. reports made by officials of the concern showed that the seven months of operation last year had been profitable and satisfactory, considering existing business conditions. The plant has been idle since October 15, but will resume operations as soon as weather permits. The 1922 outlook is very promising, building conditions showing great improvement over last year.

DOES BIG BUSINESS IN 1921

The past year has been a prosperous one for the Longmont (Colo.) Brick & Tile Co. The two previous years are the only ones in its history exceeding 1921 in volume of business transacted. The products manufactured by this concern, of which building block is the principal output, are shipped to many states, and have gained a reputation for high quality which keeps the plant busy supplying the demand.

The officials of the Longmont Brick & Tile Co. are progressive men, as is evidenced by the fact that they have installed modern machinery and adopted up-to-date manufacturing methods in their plant, which enables them to maintain the high quality of their products.

SHIPPING 15 CARS OF BRICK DAILY

An average of 15 carloads of brick per day is being shipped out of Berlin, Conn., going mostly to New York City and the Central Atlantic states.

FORM ATTAPULGUS CLAY CO.

The Attapulgus Clay Co. has been formed at Dover, Del., with a capital stock of $2,000,000. John J. Tobin and P. James, of Philadelphia, and John F. O'Brien, of Camden, N. J., are the principals filing the charter.

ORGANIZE $100,000 COMPANY

With a capital stock of $100,000 the Hull & Cowan Co. has been organized and incorporated at Jacksonville, Fla., and is reported to be planning the establishment of a plant near that city this year for the manufacture of common building brick. fire brick and paving brick. The incorporators are Henry H. Hull, Hugh B. Cowan and W. M. Mason, Jr.

BUYS PLANT EQUIPMENT

The Dixie Fireproofing Co., of Macon, Ga., has just purchased almost the entire equipment of machinery for its brick plant, and reports business good in their territory.

FIRE DESTROYS LARGE PART OF PLANT

Fire, January 12, destroyed a portion of the plant of the Electric City Brick Co., Augusta, Ga., including considerable mechanical equipment, with loss estimated at about $25,000. It is said that the plant will be rebuilt at an early date.

USES WOOD RAILS IN OPEN-AIR DRYER

Due to the low demand for brick in its locality, the Ogeechee Brick Co., Union Point, Ga., has not been operating for over a year, having closed with a big stock in November, 1920. Brick which cost them about $18 per thousand to manufacture during that year are now being sold for $6 to $7.

In their open air drying shed this concern uses 2x4 or 3x4 wooden rails, plated on top with 1x2 oak or gum strips. When these strips wear they are turned over and used on the other side. After they are completely worn out, these strips can be cheaply replaced, leaving the main rails undisturbed. However, these wooden rails can only be used if there is a sufficient incline in the track to make cars run easy.

* * *

Announcement has been made of the dissolution of the Liberty Brick Co. of Chicago.

PLANNING TO INSTALL COAL UNLOADER

Business at the Albion (Ill.) Brick Co., according to reports, is as good or better than could be expected under the circumstances. This company completely overhauled its plant last year, and is in first-class condition to handle all business during the coming season. The concern is considering the advisability of installing a coal unloading device. W. H. Broson, president, says: "We are running full capacity and expect to continue thruout the winter."

BUILT IN A DAY—BURNT IN FIVE MINUTES

One of the finest arguments for clay products as building materials is contained in a little item appearing in the January 24 issue of the Chicago Herald-Examiner. The item read as follows:

"Friendship Center, the community house built in a day, October 19, 1921, by the eager hands of scores of South Chicago business men, was destroyed by fire in five minutes yesterday.

"Many of the same band of volunteers who helped construct the building, fought vainly against the fire, caused by an overheated stove. The building at 91st St. and Houston Ave. was one story, 50x75 feet, and was equipped with auditorium, gymnasium and shower baths. It cost $12,000."

Your New Plant
laid out right—
Your Old Plant
made more productive.

Have us lay out, design and supervise the construction of your new brick or clay-working plant.

Let us tell you what we can do to make your old plant a better money maker.

We know how.

FRANK D. CHASE, Inc.
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HENDRICK SCREENS
FOR ALL PURPOSES

ELEVATOR BUCKETS
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GENERAL SHEET and
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PLATE CONSTRUCTION

Ask for your copy of the Perforated Metal Handbook

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Russell
TUNNEL KILN

"Modern Firing"

is a book that should be read by every clayware manufacturer who has an eye to increasing his output, lowering his costs, improving his product.

"Modern Firing" shows how and why these desirable results are brought about by the installation of a Russell Tunnel Kiln. (Zwermann Patent.)

"Modern Firing" sent free on request

RUSSELL ENGINEERING CO.
Railway Exchange Bldg., St. Louis, Mo.

E-355

HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
and
Grinders

Especially Prepared
for Brick Making

Sales Office: CHARLESTON, W. VA.

As stated, this building was erected in one day, a feat which probably was possible only with lumber. It was destroyed in five minutes, also possible only with lumber. Had the building been built of brick or tile—but then that's the old story.

EFFICIENT HOME MADE TRUCK

A home-made truck, built by Munson Bros. & Co., of Capron, Ill., has proved very effective in loading drain tile onto cars. The bottom of the truck is not over seven inches from the floor and has no handles, but the ends slant to conform to the tile. Two three-inch eastors are fitted to one end, and two eight-inch wheels loose, on the axle, to the other end. The truck runs on light plates, and moves very easily when loaded with 8 to 4-inch tile.

The railroad track along the kilns at this plant is but slightly depressed, and about six feet from kilns. The car floor is even with the third tier of tile, and the men stand on the kiln floor to load these three tiers, leaving a strip in center of kiln for the trucks, which are removed last.

These trucks are not adapted for wheeling on dirt.

FIRE BRICK COMPANY INCORPORATES

The Carbon (Ind.) Fire Brick & Coal Co., has filed articles of incorporation with the secretary of state, showing a capitalization of $250,000. The company will engage in the manufacture of brick, tile and other clay products. J. L. Sydenstricker, E. J. Strader, and Benjamin Simpson are directors of the new company.

WILL SPEND $200,000 ON NEW PLANT

Thos. J. Sare, secretary of the Bloomington (Ind.) Brick & Tile Co., has announced that his company is having plans drawn for the construction of a $200,000 plant. The plans are expected to be completed early in the spring. The factory building itself will be of brick construction with two radial brick stacks and two 150 horse power boilers. The kilns will be 12x32 feet.

INSTALLS COMPLETE MACHINE SHOP

Business is slow at present for the What Cheer (Ia.) Clay Products Co., but the outlook is fair for next year. A complete machine shop has been installed at this plant, and hereafter the company will make its own dies, and so forth.

ADEL COMPANY MAKES IMPROVEMENTS

The Adel (Ia.) Clay Products Co. has recently installed a new ten ton clay car motorized with three phase alternating current. A new auto-feeder has also been put in, and a clay shed has been built.

INSTALLS WASTE HEAT DRYER

Davenport (Ia.) Brick & Tile Co. installed a waste heat dryer last spring, which greatly facilitates plant operation. The company operates about seven months a year; business has not been so very good during the past season.

TEST 25,422 CARS OF ROAD MATERIALS

25,422 carloads of material were tested and inspected for primary road work in the past road building season by Iowa highway engineers. 3,635 cars were cement; 19,484 were sand, gravel and stone; 425 brick; 80 reinforcing; 1,798 drain tile. 354 carloads of material were rejected as inferior. Had the 14,188 barrels of cement which were rejected been used, it would have been sufficient to spoil four miles of pavement, estimated at $140,000.

The material and test department of the Iowa State Highway Commission is in charge of all testing and inspection of all material of every kind entering into road construction work on the primary road system, which has been estimated at $140,000,000.—*Better Iowa.*

BURNING CORN ROUSES MUCH COMMENT

The Adel (Iowa) Clay Products Co. has secured no little publicity from burning Iowa corn in its kilns. The matter has been discussed pro and con in the newspapers and Col. L. W. Ainsworth, world war officer and tentative candidate for secretary of the state of Iowa, also secretary of the Des Moines Grain Exchange, has called the Adel company to task for using the principal product of the state for fuel. Col. Ainsworth's chief contentions were that corn was being burned when thousands of people in Europe were starving and for the further reason that the burning of corn gave Iowa a black eye as a corn raising state.

H. R. Straight, secretary and general manager of the Adel Clay Products Co., made a very strong reply to Col. Ainsworth in which he called attention to the fact that very little of Iowa corn could actually reach starving Europe on account of the transportation facilities of the needy countries and cited the fact that part of the corn which had been shipped to Russia was now icebound at Riga. He denied that burning of corn could in any way injure the good name of the state and stated that his company was trying to use constructive efforts to give actual relief to the farmer and reduce the overproduction which is the cause of the present low prices.

Mr. Straight showed that not only was the corn a satisfactory fuel for burning clay products and incidentally eliminating the $4 per ton freight charge on eastern coal, but that it was his opinion that it could be used as a fuel for operating farm tractors.

A small amount of eastern coal is being used with the corn and the Adel producers declare that they are well satisfied with the experiment.

SHIP FIRE CLAY FROM KANSAS CITY

The first carload of fire clay ever shipped from Kansas City, Mo., was sent out in January by the Macks Creek Sand & Clay Co., who have an immense deposit of a very good fire clay.

DEMAND EXCEEDS PRODUCTION

R. M. Godfrey of Rosedale, Kan., reports business good in his territory, and states that the demand for his product generally exceeds production. His plant operates 12 months a year, except during extremely cold weather. Mr. Godfrey has recently installed a complete oil burning system on his plant.

COMPLETES FOUR DRYERS

Two new kilns are under construction at the plant of the Independence (Kan.) Paving Brick Co. Four dryers have recently been completed, and the company has purchased 100 new dryer cars. Building operations have been going on for more than a year.

The business outlook is not very promising at present, the company states, because farmers are trying to stop all road work and paving in general.

ORGANIZE DAWSON BRICK CO.

At Dawson Springs, Ky., the Dawson Brick Co., has been chartered with a capital of $20,000, by Lee O. Dixon, Charles F. Cato and I. N. Day. Prospects at Dawson are promising, as it is the largest health resort in the state, and the Government is erecting a number of hospital buildings there, which will result in more stores, hotels, and so forth.

NEW CLAY PRODUCTS DEALER

Louisville, Ky., has a new concern which will handle a complete line of building supplies, including face and common brick, this concern being the L. J. Bolster Co., in the Norton

THE KILN OF SURE CONTROL

AMERICAN
• DRESSLER •
TUNNEL KILN

¶ The sure control
of Dressler Kilns
makes possible
greatest fuel
economy.

American Dressler Tunnel Kilns, Inc.
1740 East 12th Street,
Cleveland, Ohio

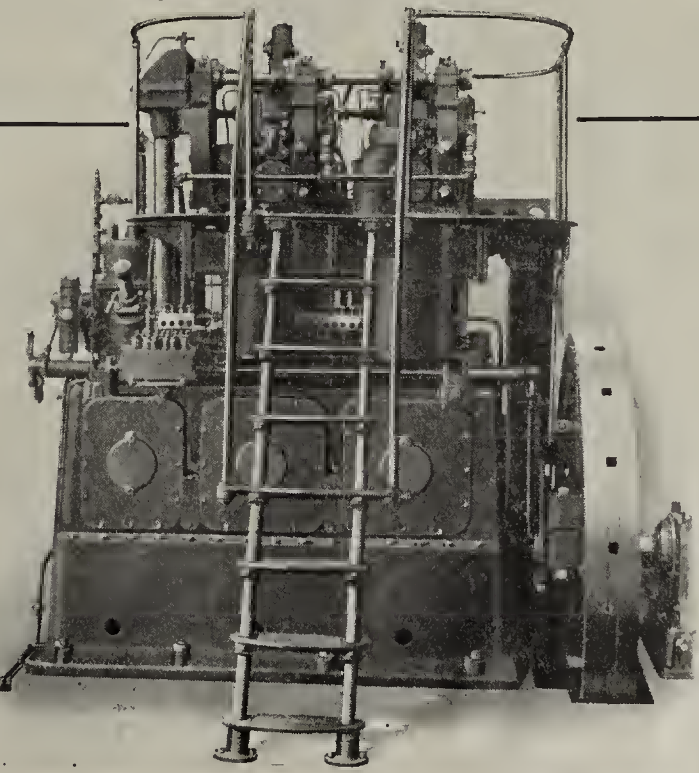
DIESEL ENGINES
FOR CLAY PLANTS

Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal types furnished.

THE HADFIELD-PENFIELD STEEL COMPANY
Bucyrus Ohio
Formerly the American Clay Machy. Co.



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RUBBER GOODS
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WHY TAKE ANY MORE CHANCES?

Williamsport Telfax Color Chart and a booklet on modern wire rope mailed on request.

WILLIAMSPORT
is a
QUALITY Wire Rope

For years the output of this mammoth plant has been absorbed by operators, whose requirements demanded uniformly high quality.

Increased facilities now make available to all, this quality wire rope. Millions of dollars have recently been spent on new additions, machinery and equipment, including a modern wire drawing plant. And today we are one of a few who draw all their own wire.

We invite and welcome all visitors to every part of this great plant. We want you to see how carefully we guard every step in the manufacture of Williamsport Wire Rope.

Here are two grades of wire rope; same size; same construction

They look so much alike that the maker himself cannot distinguish the difference. It requires a laboratory test. And, yet there are six cents difference per foot in the base price and *four tons difference in tensile strength*

Countless mistakes have occurred since wire rope has been made—some willful—some perhaps fatal, in the marketing and use of wire rope under these conditions.

You don't need to buy wire rope this way anymore—
WILLIAMSPORT protects your purchase

The core of every Williamsport Wire Rope now contains their new Telfax Patented Tape, definitely marking each grade of wire rope, thus removing forever the element of chance and necessity for guessing. Look for it.

It is the only wire rope made that provides this positive protection. So that now, anyone can distinguish at once the grade of wire rope he receives if he specifies Williamsport. This protection is of vital and far reaching importance to all wire rope users.

WILLIAMSPORT WIRE ROPE COMPANY
Main Office and Works
Williamsport, Pa.
"accepted as the best"
General Sales Office: Peoples Gas Bldg.
Chicago, Illinois

Building, with a yard and warehouse at Bickel and Baxter avenue, and plans for another yard in the central or southwestern end of the city. The concern is composed of L. J. Bolster and H. L. Hansberry, formerly with T. L. Herbert & Sons, Nashville; and R. L. Duncan, formerly with the Cincinnati office of Philip Carey & Co. The company has arranged to handle the agency for the Bush brick manufacturing interests of Nashville, and will take on agencies for several good lines of face brick, sewer pipe, drain tile, cement, lime, plaster and general building supplies.

KENTUCKY GETS BIG REFRACTORY PLANT

The Kentucky Refractories Corporation, of Russell, Ky., will break ground very shortly for the erection of a new plant to be built at that city. The company's factory will be devoted entirely to the manufacture of "High Heat Duty" brick as well as super-refractories and will be of fireproof construction thruout, electrically driven and will be the last word in modern manufacturing methods. The first unit which will be completed ready for operation at an early date will have a daily capacity of 75,000 standard brick.

This corporation has 3,000 acres of clay lands adjacent to its plant. The quality of this material ranks among the highest in the country and promises to open up a very valuable and interesting field of geological endeavor in that vicinity.

The final plans of this concern call for a refractory plant which will rank among the largest in the United States and the products to be manufactured can be viewed by the refractory trade with much interest as the personnel of this corporation has had many years' experience in manufacturing high grade and super-refractories.

This corporation is composed of 7,500 shares of preferred stock and 7,500 shares of common stock, par value $100 per share. The officers of the corporation are: C. K. Turley, president; R. T. Hipp, vice-president and general manager, and A. J. Ivey, secretary and treasurer.

H. E. BUCK RESUMES WORK

On January 1, at which time the lease to Delatte & Lagrange, Inc., expired, the H. E. Buck Brick & Manufacturing Co., Lake Charles, La., resumed the operation of its brick plant and material business. This plant has been leased to the above mentioned parties for five years.

PREDICT PRICE ADVANCE IN BRICK

Altho brick prices in New Orleans have been cut considerably since the new year began, one concern reducing their price $2.50 per thousand, the manufacturers at Shreveport, La., predict an advance on common and face brick in their city. The present figure of $15 is expected to go to $17 and $18 a thousand.

CUTS BRICK TO $12.50

The Salmen Brick & Lumber Co., Ltd., of New Orleans, La., cut the price of brick to $12.50 a thousand on January 1. It is expected that this action will result in speedy sales and aid in bringing about increased building operations in that vicinity. The company has 10,000,000 brick in its yards, and hopes to dispose of this supply in order to be able to run its plant full time.

"This is a 16⅔ per cent. reduction of the price of brick, and 50 per cent. under the price a year ago," said Fred W. Salmen, president of the company. "We are simply doing our bit to bring about normal prices and help along the 1922 building program."

BUILDING LARGE CAPACITY PLANT

The Paloma Brick & Tile Co., Inc., of Wilson, La., is endeavoring to construct a modern clayworking plant, 200 tons daily capacity, to turn out hollow building tile. Claude Smith, superintendent, states that the company has bought about 26 acres of land with enough shale on it to operate a modern plant at full capacity for 55 years.

Machine Room and Tower of Paloma Brick & Tile Co., Wilson, La., Under Construction.

Mr. Smith says: "We have most of the foundations and tunnels in for our buildings, and the frame work up for the machine room and machine tower. We expect to have the same ready for operation some time during the coming summer."

OPERATES FIVE MOTOR TRUCKS

The Brooks Brick Co., Bangor, Me., has in operation five motor trucks. Two of these are equipped with a home-made dumping body which aids greatly in hauling clay from the bank to the crusher, and is very satisfactory.

BROOKS BRICK CO. PUSHING IDEAL WALL

Experiments being conducted by the Brooks Brick Co. at Brewer, Me., for the use of brick in house construction at a cost which will bring brick in direct competition with wood are meeting with much success. H. N. Brooks, superintendent of the company, states that thru use of the solid plan for brick walls the cost of brick can be brought down to from six to eight per cent. additional over wood, depending upon location, a difference which is easily made up for in the permanency of brick construction. Under the "Ideal" plan being developed, the saving is even greater, making the work cost less than wood. The Brooks company operates three yards, manufacturing wire cut and water struck brick with an output of about 6,000,000 annually.

INVESTIGATING EIGHT INCH WALL

A bill has been introduced in the Massachusetts Legislature which seeks to have uniform laws enacted thru the various municipalities of the state relating to the building code. One of the interesting features of this proposed bill is the request for a commission to look into the question of reducing the thickness of brick walls under the more recent building code adopted in some communities with a view to lessening the cost of brick construction and make possible the erection of more brick buildings as well as residences. With the high prices of lumber which prevail at this time in comparison with ten or a dozen years ago and the outlook for still higher lumber prices in the future, legislators are endeavoring to find a material which will be as economical as wood and which will give equal satisfaction. They believe that if investigation shows the thinner brick walls as feasible, strong recommendations will be made for the use of brick, thru fire resisting ordinances, thruout

S E CO E

Let The Poidometer Take Care of Your Clay Tempering

The tempering of clay is one of the most vital operations in the clay plant, and also one of the biggest items of cost.

The poidometer will eliminate your pug mill man, temper your clay with 99.75% accuracy, and deliver the raw material at the rate of from 1½ to 21,000 pounds per minute!

It stands to reason that the poidometer will cut your costs.

Write us for proof

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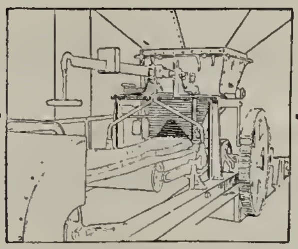
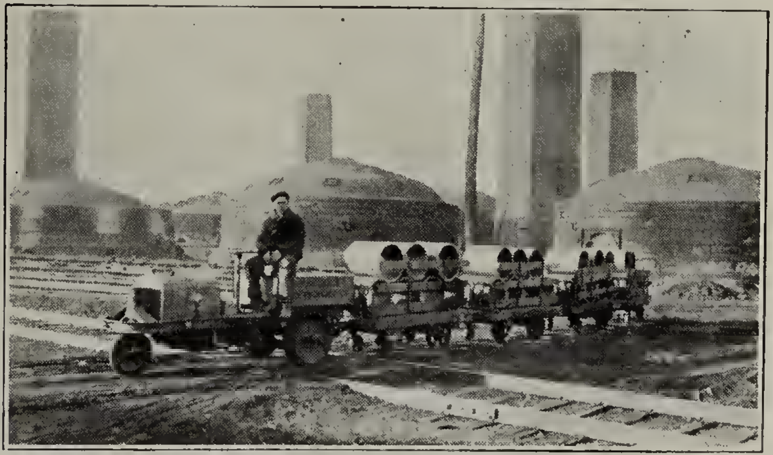
2828 Smallman St., Pittsburgh, Pa.

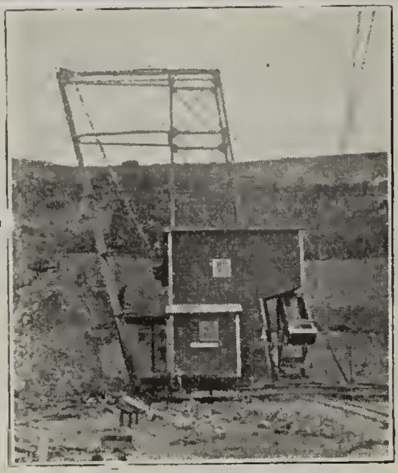


This Photo Tells a Real Story



A Clark Tructractor doing the work of eight wheelbarrow men in a clay products plant.

CLARK TRUCTRACTOR CO.
1124 Days Ave., Buchanan, Mich.



It's Not So Much What You Pay for Machinery, But What You Save by Paying

The cost of machinery never denotes economy. It's the years of satisfactory service you get out of it that proves its worth.

Wherever The Eagle Shale Planer is used there is ECONOMY AND EFFICIENCY. It's the most up-to-date shale gathering machine on the market today.

Write us today and let us explain what the Eagle will do for you. No obligation.

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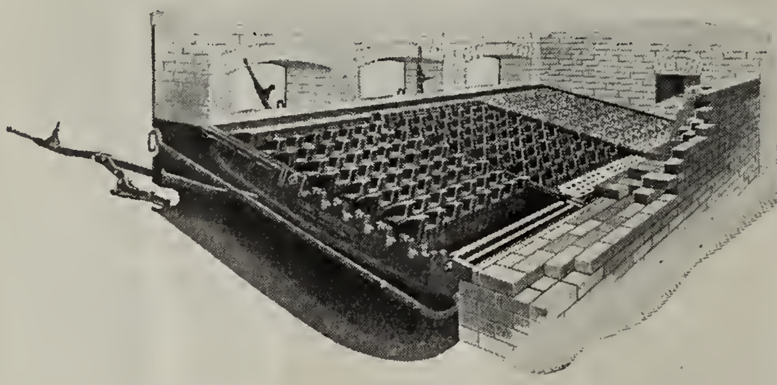
Des Moines Iowa

COKAL HAND STOKERS

The well-established success of COKAL STOKERS is a logical result of STOKER manufacture.

Simplicity, durability, quality. These three leading factors of STOKER success are built in COKAL STOKERS.

Isn't it well worth your while to investigate a stoker that has proven itself worthy thru many successful installations?



Write us today for complete information

COKAL STOKER CORPORATION
347 EAST OHIO STREET, CHICAGO

the state. The office of the state fire marshal is to be represented on the commission.

HIGHWAY CONFERENCE AT ANN ARBOR

The Eighth Annual Conference on Highway Engineering, to be given by the University of Michigan at Ann Arbor, will be held February 13 to 17, 1922. The program will be under the direction of the College of Engineering, in cooperation with the Michigan State Highway Department. The purpose of the Conference is to aid in supplying to highway commissioners and engineers information relating to highway transport, organization, drainage systems and foundations, and the construction and maintenance of roadways and bridges suitable for roads and streets in the State of Michigan.

Many interesting papers are scheduled, and the various topics of highway engineering will be thoroly discussed. Two papers of special interest to the clay products industry are: "The Developments in Methods of Constructing Brick Pavements," by Arthur H. Blanchard, Professor of Highway Engineering and Highway Transport, University of Michigan; and a talk by Charles M. Upham, State Highway Engineer, North Carolina, on "Comparison of Sub-Drainage by Deep Side Ditches and Tile Drains."

BRICK PLANT TO GO UP IN RENO

The Sierra Clay Products Co., of Reno, Nev., has announced that it will erect a brick and tile plant within a few months in the Truckee River canyon, ten miles from the city on the main line of the Southern Pacific R. R., where the company owns extensive clay deposits. Terra cotta and pottery will be added to the line after operation is well under way. H. O. Lague, who heads the concern, says that they have a splendid market already established, since it has been necessary for building materials to be shipped in from other states.

NEW NEW YORK BRICK COMPANY

The North River Brick Co., New York, N. Y., has been organized under state laws with capital of $50,000 to manufacture common brick. The company is headed by F. Raab, F. Demovitch and M. M. Sherower. It is represented by Joseph, Demov & Feinstein, 277 Broadway, New York.

WILL MAKE PLANT ADDITION

The Perfect Brick & Hollow Tile Co., 188 Montague Street, Brooklyn, N. Y., has completed plans and will soon commence the erection of a new one-story plant on Grand Street. It will be 97x100 feet, and is estimated to cost about $25,000. Silverstein & Infanger, 190 Montague Street, are architects.

PLAN TO HOUSE 45,000 FAMILIES

A plan to solve the housing shortage by the immediate construction on a vast scale of 1,500 five story tenements, to accommodate 45,000 families of 225,000 persons, at an expense of $100,000,000, was outlined before the Free Synagogue recently by Samuel Untermyer, counsel to the Lockwood Committee, in an address on "Government Responsibility for the Housing Crisis." The plan is to amend the state insurance law so as to permit insurance companies to invest up to 10 per cent. of their total admitted assets in tenement houses for the period of the emergency, provided the investments yield a fair return, the rooms to be rented at not more than $9 a room, tho it is contemplated renting the apartments for $8 a room.

DAYTON O. K.'S IDEAL WALL

The building inspection department of Dayton, Ohio, has approved the Ideal wall, and this type of construction is now included in the code. The Crume Brick Co., of Dayton, is recommending the use of the Ideal wall for building residences, garages and other small buildings.

* * *

The Medal Paving Brick Co. has announced the removal of its office to 4900 Euclid Ave., Cleveland, Ohio, and all communications should be addressed there.

COLUMBUS PRICES DECLINE

There was a slight decline in the price of both face and common brick in Columbus and central Ohio territory since the first of the year. Face brick f. o. b. cars are selling from $20 to $34, depending on quality, while common brick sell from $14 to $15.50 delivered on the job. There is some price cutting reported, especially in common brick.

ELECT OFFICERS

The stockholders and directors of the LaRue (Ohio) Tile Co., held their annual meeting January 18. The meeting of the company was held in the office of the LaRue bank and the following officers were elected: A. W. Jones, president; Charles F. Stahl, vice-president; M. C. Clements, secretary and treasurer. Carl Smith was elected manager of the company.

PUTS OUT LEATHER BILL FOLD

A very attractive leather bill folder has been received in the offices of Brick and Clay Record recently. It is one of the latest advertising stunts of Robinson & Sons Sewer Pipe Co., of Uhrichsville, Ohio, to promote their product. The name of the company is neatly stamped in gold on the inside of the case, so that anyone using it is constantly reminded of this company.

FRANKLIN BRICK TO START SECOND PLANT

The Franklin Brick & Tile Co., of Columbus is getting ready to put its second plant at Taylor Station, east of Columbus in operation. Plant No. 1 is now making drain tile and building tile and has been in operation for several weeks. The first deliveries started about February 1. It is planned to make rough texture face brick and common brick at the plant to be started soon.

SHIPS 2,000 MORE CARS IN 1921

The Robinson Clay Products Co. and Crouse Clay Products Co., of Akron, Ohio, report satisfactory business during 1921. The former concern shipped 2,000 more cars than during the previous year, a report states, while the Crouse Co.'s production was almost equal to 1920. The clay products industry in the district surrounding Akron has prospects for a successful 1922, since much public work which has been neglected during the last several years will now be undertaken in earnest.

GOFF-KIRBY WILL MOVE

Removal of the Goff-Kirby Co., Cleveland, Ohio, to new and larger quarters is announced this week. The change will be made February 1. The tenth floor of the Hanna Building has been taken. All departments will be enlarged, particularly the brick and building supplies division, of which A. O. Preyer is manager. A feature of the change will be a separate room for the display of all building materials and supplies handled by the firm, explains Mr. Preyer, where 250 feet will be given over to this purpose. The organization will remain intact, and the change will make for a bigger and better service to contractors, builders and other users of materials.

DECLARES SIX PER CENT DIVIDEND

A six per cent. dividend has been declared by the directors of the Ironclay Brick Co., Columbus, Ohio. David Lehman

OSGOOD

OSGOOD ¾ and 1 cu. yd. Revolving Shovels are noted for their ability to produce more yards at less cost due to their rigid and sturdy construction, simplicity of operation and long life.

Every casting on Traction or Continuous Mountings is of open-hearth, annealed cast steel. Quick acting power steering devices, Horizontal Hoisting Engines, Vertical Submerged Tube Type Boilers and the fact that Crane, Clamshell or Dragline features can be embodied in their Construction are IMPORTANT TO YOU.

The OSGOOD Company
Marion, Ohio, U. S. A.

THINK WHAT IT WOULD MEAN IN SAVING IF THE 15,000,000 TONS OF COAL USED BY THE CLAY PRODUCTS INDUSTRY YEARLY, WERE UNLOADED BY THE

SUNBURY
AUTOMATIC CAR UNLOADER

Sunbury Automatic Car Unloaders have proven that they are a paying investment, unloading coal and other loose materials at the rate of from 30 to 50 tons per hour at the least, and requiring the services of only one man to operate. Think what this method means over the old, slow and costly method of having two, three or four men to do the work which then requires a full day or more.

Tell us your coal handling requirements and we will show you how a Sunbury will fit in with your plant equipment

THE SUNBURY MANUFACTURING CO.
SUNBURY, OHIO

was promoted from assistant manager to sales manager. W. D. Brickwell was chosen president and treasurer; J. M. Adams, secretary and general manager; and Ralph McCullough, auditor. The company has brick plants at Shawnee, several common brick plants at Columbus, and also acts as jobbers for other clay products.

HOLD ANNUAL MEETING

The annual meetings of the Nelsonville (Ohio) Brick Co., and the Ohio Fireproofing Co., of the same place, were held late in January. No changes were made in the board of directors or officers. J. L. Murphy is president; P. C. Morris, vice-president; W. H. Parks, treasurer; and D. A. Evans, secretary of the Nelsonville Brick Co.; while W. H. Parks is president and treasurer; J. L. Murphy, vice-president; and D. A. Evans, secretary of the Ohio Fireproofing Co. The year was a fairly good one for both companies when circumstances are considered.

EXPECT REVIVAL IN FIRE BRICK

Ohio manufacturers are looking for a revival in the fire brick business in February, basing their hopes on the increased activity in the steel industry and the large rail purchases being made by railroads.

INSTALLS 13 MILES OF DRAIN TILE

Walter S. Wakefield, who lives on a 210 acre farm near Harrison, Hamilton County, Ohio, has put in nearly 13 miles of drain tile on his land, making it better to live on and far more fit to farm.

"The house and buildings are low," says Mr. Wakefield in telling of his extensive use of farm drain tile, "and we used to have great puddles of water all around the farmstead group in wet weather. In a two-story hoghouse near the barns, the pigs had sometimes to climb upstairs in order to escape drowning.

"First we put in a big 12 inch main from the building to a creek 1,300 feet away. This, with surface inlets, has taken care of all the flood water. We had to dig away intervening high spots, sometimes as much as nine feet above the general level, but it was well worth it.

"This 12 inch main has been used as an outlet for some 70,000 feet of lateral tile lines which we have since installed to drain the whole 210 acres.

"Such drainage costs money but it pays. My neighbors feel the same way. Four of them have recently put in orders for their first shipments of tile."

CLAY AND COAL IN SAME DEPOSIT

Out of the hole in the hillside came a mule hauling two cars of coal. And in just a few moments out came another one hauling two cars of clay.

It is one of those unusual feats of nature which seems to have been planned expressly for the benefit of mere man. Here, lying together, one on top of the other, are two substances which, under proper conditions, blend into one and endure forever. The clay is molded into shapes—the coal disappears in smoke.

This arrangement of deposits stretches along a distance of 25 miles on both sides of a railroad starting in northeastern Ohio and running to within 40 miles of Pittsburgh. Pa. The clay supply is almost inexhaustible and a good grade of bituminous coal is readily available in most sections.

Along this line are already established five brick companies and several shippers of crude clay and miners of coal. The railway connects with the Erie and Pennsylvania lines and affords an ample market outlet as well as favorable freight rates.

The clay can be either mined or gathered with steam

Burn Your Ware With
PRODUCER GAS

Hand-Poked and Mechanical Producers, Rotary Dryers and Calciners are our specialty.

Expert engineering service is yours if you are contemplating burning with producer gas, or if your present system is not satisfactory.

We have been in this business thirty years.

We also manufacture stacks, tanks and other steel plate work.

Write us today

DUFF PATENTS COMPANY
INC.
Frick Building PITTSBURGH, PA.

REG. U.S. PAT. OFF. TRADE JENKINS MARK Jenkins Bros

Merit tempts invitation

Jenkins Valves are made only by Jenkins Bros. and have the Jenkins Diamond and signature cast on the body—a valve without this identification is not a genuine "Jenkins".

Valves in types and sizes for all requirements of plumbing, heating and power plant. At supply houses everywhere.

"Jenkins service can only be expected from genuine Jenkins Valves"

JENKINS BROS.
New York Boston Philadelphia Chicago
Montreal London Havana
FACTORIES: Bridgeport, Conn.; Elizabeth, N. J.; Montreal, Canada.

Jenkins Valves
SINCE 1864

shovels. One concern, shipping crude fire clay to steel mills has uncovered enough shale to operate a good-sized brick plant and is planning to build one in the near future.

The clay is very plastic, often 12 to 14 feet in thickness. The lower bench contains a large per cent. of silica and in some parts of the mines passes into a flint clay, both grades suitable for fire and paving brick, adamant wall plaster and for use in potteries. A fine grade of face brick can also be made.

By mixture of shale and ore, mottled or spotted brick are secured to the full extent of contractility and the clay can be molded into shapes while nearly dry at a great reduction in expense.

One brick plant in this section is turning out 31,000 brick per day, operating seven periodic kilns. Natural gas is used except in the winter months when they burn with the coal from their own clay property. Coal for power is obtained in sufficient quantity the year round.

This plant makes a good buff face brick from the straight clay and a nice shade of gray is produced by mixing ground manganese. The brick is sold in New York, Chicago and Detroit.

The railroad serving this territory has been operating more than 30 years but during the last three has been improved to a considerable extent so that it is now in a position to adequately take care of any amount of shipping. Detailed information may be obtained by writing to Brick and Clay Record.

WILL RAISE CAPACITY TO 100,000

The Muskogee (Okla.) Vitrified Brick Co., has plans under way for the rebuilding of its local plant, recently destroyed by fire. A new main building, 60x140 feet, will be constructed, with smaller works buildings, estimated to cost about $10,000. Approximately $20,000 will be expended for new machinery and equipment. It is proposed to develop an output of about 100,000 brick per day at the plant. Frank A. Nicholson, president and manager, is in charge.

GETS ORDER FOR 600,000 FACE BRICK

According to Charles H. Andrews, secretary and treasurer of the New Castle, Pa., Mining and Clay Products Co., one of the largest orders ever closed by that plant has been secured from the Toledo, Ohio, school board for 600,000 "Heather Tex" brick, a new design recently perfected by the local company. The order will keep the plant busy for some time.

ACQUIRES KEYSTONE CLAY CO.

The Anthracite Brick & Tile Corporation, Wilkes-Barre, Pa., recently incorporated under Delaware laws with capital of $225,000, has acquired the property of the Keystone Clay Co., Wyoming, Pa., and plans for large operations in this section. The company has a fine tract of raw material, and will manufacture high-grade common brick, tile and other burned clay products. It is represented by the Corporation Trust Co. of America, du Pont Building, Wilmington, Del.

FLEURIE PLANT DESTROYED BY FIRE

The Fleurie brick plant at New Cumberland, Pa., was almost totally destroyed by fire on the night of December 23. Several workmen on night duty discovered the blaze, which started either in the machine house or engine room. Despite the valiant efforts of the local fire department, with aid from two others in the vicinity, the fire spread beyond control, ruining the machinery and destroying practically all the buildings. E. E. Fleurie, owner of the plant, did not carry any insurance, and sustains a loss of $20,000.

OUR FIRE CLAYS

are of several grades —

One grade has the strength to withstand sudden changes in temperature such as is required for roofs of malleable furnaces, or intermittent heatings and coolings such as needed for saggers.

Another grade has great strength necessary for sanitary ware and pottery.

A third grade withstands slagging action such as is encountered in foundry and blast furnace linings.

Each has been supreme
in its field for 40 years

***The* ANNESS & POTTER FIRE CLAY COMPANY**

Main Office & Works: Woodbridge, N. J.
New York City Office: Longacre Building

CALDWELL
Service

HALF a million dollars' worth of well-selected stock, constantly maintained and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

H. W. CALDWELL & SON CO.
LINK-BELT COMPANY, OWNER
CHICAGO, 17th Street and Western Avenue
DALLAS, TEXAS, 709 Main Street
NEW YORK, 299 Broadway

Why Have One!

In the last issue of "Brick and Clay Record," by reprint, we told of an organism which is aiming at sapping out all the chances you have of making a profit if their plans succeed.

That octopus, in the past, has been organized labor, which is again planning on greatly enlarging its field when conditions more nearly approximate normal. Their plan is to greatly increase labor prices. Wherever that has occurred, the Clay Products Industry has been unable to compete with lumber, cement and other products.

An octopus, you know, has eight tentacles of such strength that when one of them reaches out, it is almost next to impossible to escape without injury.

May we outline our plan for a barrier against the growing of an octopus, which as you know one cannot reason with?

An inquiry will result in detailed information.

NATIONAL CLAY PRODUCTS INDUSTRIES ASSOCIATION
NCPIA
Chamber of Commerce
CHICAGO

Work on the installation of new machinery and rebuilding the plant will begin at once, with hopes of beginning operations in eight weeks.

MOVES TO NEW DEPOSITS

The Hedgecock-Williamson brick plant has been moved from Fontaine, Va., to Edgewood, six miles west of Martinsville. Lack of sufficient clay at their former location is the reason given for the change.

NEW WYOMING PLANT IN SIGHT

Goodrich & Sons, brick manufacturers of Wheatland, Wyo., are planning to establish a brick plant at Yoder, the present terminus of the branch road of the Union Pacific, in the spring. The elder Goodrich is a pioneer brick manufacturer in the Wheatland district, and has furnished material for many of the large buildings in that city.

BUILDS 75,000 CAPACITY KILN

The Janesville (Wis.) Brick Co. has completed the construction of a new $6,000 kiln of the latest design. The kiln has a capacity of 75,000 and turns out 90 per cent. high grade face brick. It measures 30 feet in diameter and is 58 inches thick requiring 125,000 brick to build.

⁂

THE BUILDING SITUATION

(*Continued from page* 211.)

while reports from Birmingham and other of the larger southeastern cities indicate unusual activity. There is considerable activity in home construction and as freight rates on lumber are still unusually high brick will be largely used in home construction again this year. This demand is expected to materialize within the next month or six weeks by which time much of the new construction will be under way.

The demand for building brick during the last six months of 1921 was such that production at the southeastern plants was considerably better than the first six months of the year, and there is every promise that the first six months of 1922 will be very much better than the last half of 1921.

The export outlook is unusually good and manufacturers are anticipating one of their best export years during 1922.

1921 Figures in San Francisco Show Drop

Figures showing building operations in San Francisco for the year 1921 have just become available. The total building contracts filed during the year reached $29,153,472 as compared with a total for the year 1920 of $32,869,009. This reduction in the building figures is accounted for by the strike which lasted five months, from May to October. A reduction in wages and an adjustment of working conditions resulting from the controversy, which was settled in October, have caused a revival in building.

A reduction in the price of many items of building material has occurred. When a further cut in many of these prices, which is confidently expected, is actually made, building operations should reach higher totals than for many years past. The largest amount involved in a building in 1921 was the 22-story building now being erected by the Standard Oil Co. of California, at a cost of $2,400,000.

The "Own Your Own Home" campaign that is being carried on extensively in San Francisco and the bay-cities is meeting with state-wide approval. Several building material contractors have given the campaign their support, including the Henry Cowell Lime & Cement Co., the Atlas Mortar Co., the California Brick Co. and the Livermore Fire Brick Works. The results of this campaign so far have been very satisfactory.

Machinery and Equipment

THE CONTINUOUS PLANER

"There are two fundamental factors in the manufacture of brick and other finished clay products which have materially emphasized the value of the Adel Excavator.

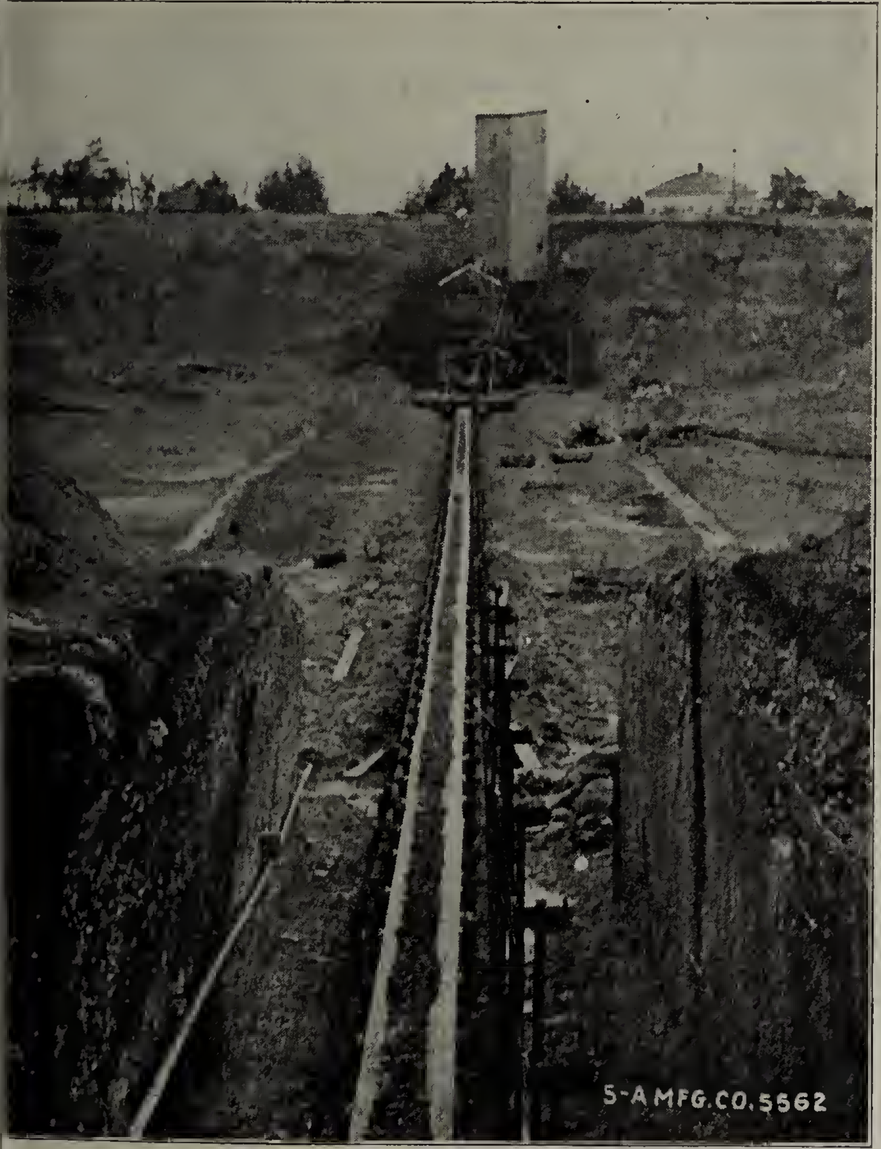
"First—this machine is designed to be operated by one man with the occasional assistance of one other man to lay the advance track and other work not directly connected with the actual manipulation of the excavator. This is a decided saving when compared with other methods of excavation which are commonly used in removal of the raw material from the bank.

"Second—the machine cuts and delivers a product which is finely divided and which is a thoroly mixed composition of the various strata of the bank. The manner in which the material is planed from the bank insures a uniform mixture, which is of vital impotance to the manufacturer in producing the final product. In its finely divided form the material is easily handled, stored and reclaimed, as in no case are the lumps of material of any appreciable size. It is, therefore, quite unnecessary to install large and heavy machinery for the handling, storing and reclaiming of surplus material.

"The Adel Excavator is designed to cut on the upward travel of the chain. Each cutting knife is followed by two buckets which catch the material and carry it to the discharge point at the top of the machine.

"The Adel Excavator, in general, consists of a heavy bucket elevator, provided with cutters spaced at regular intervals between the elevator buckets. The elevator is carried on a truck, and pivoted, permitting of oscillation thru an arc of approximately 180 degrees. The depth of the cut may be adjusted to the height of the bank and to the motion of the elevator in order that the cuttings from one tool completely fill the series of buckets directly following.

"Immediately succeeding the completion of a cut thru the semi-circle the machine is mechanically advanced for the re-



The Excavator is Progressing Into Shale Bank. The Belt Conveyor from the Excavator to the Plant is Shown in the Center of the Illustration.

"HURRICANE" DRYERS
for Ceramic Products

Cutting Costs by Uniform Drying

The time required to dry ceramic ware is greatly reduced when the moisture is withdrawn from all surfaces, evenly and uniformly. Besides cutting down the drying time, steam and power consumption is consequently lowered.

Uniformity in the results obtained is the underlying secret of the success of "Hurricane" Dryers.

All sizes and shapes of ware are being handled, including heavy electrical insulators, saggers, general ware, enameled ware, spark plug cores, enameled table tops, etc., with equally excellent results on all.

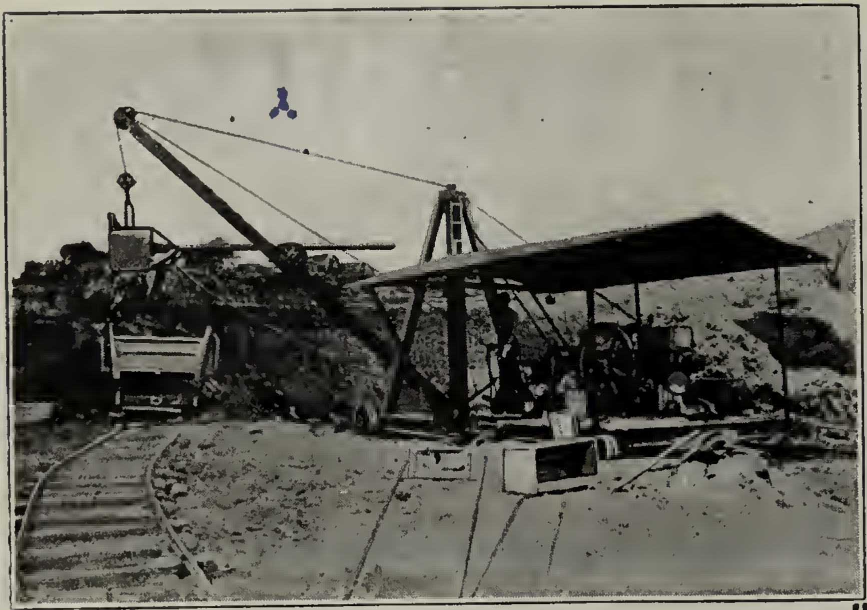
Are you obtaining quick, uniform drying, or are you wasting steam, time and power?

"Hurricane" Dryers will remedy the losses.

Automatic Stove Rooms and Mangles
Stillage and Truck Dryers

The Philadelphia Drying Machinery Co.
3351 Stokley Street - - Philadelphia, Pa.

"HURRICANE" Tunnel Stillage Dryer



Another Clay Plant Operator Has Cut His Pit Costs $30.00 Per Day as Well as Improving His Brick.

Read this letter from the S. P. Brick Co., Fresno, California:

"Answering yours of the 10th with reference to the excavator, beg to advise that we are very well satisfied with the machine. It enabled us to eliminate six men in the clay pit at a saving of about $30.00 per day.

Our bank is 14 ft. deep and of a very hard clay formation. Before getting the excavator, we had to use quite a little of powder. This we have also been able to eliminate. Furthermore, we get an even mixture of clay from the bottom of the clay to the top of the pit, which gives us a much better brick.

We estimate that the machine has paid for itself during the last season."

This plant is one of many plants with a capacity of 25,000 to 100,000 brick per day, which are successfully winning their clay by this method.

The one man excavator has taken its place in this day of high labor and freight rates as the most efficient and economical method in speeding up production in smaller plants.

The one man excavator is simple, dependable and will operate in rain or shine. Driven by gasoline or electric power, and will displace a dozen men from the pit. No other machine like it on the market. Its price and operating costs are within the means of the smallest producers.

We also furnish excavator with caterpillar treads.

Write for full information

Bay City Dredge Works
Bay City, Michigan

quired depth of the cut, which ranges from one to three inches, according to the material. After each completion of a swing thru the 180 degree arc the machine is advanced and this cycle of operation continues until it is necessary to advance the pivot truck and to lay additional track. The advancement of the pivot truck is completed mechanically under the machine's own power.

"As the elevator is operated, the cutters plane the material from the bank, and the particles drop into the buckets and are discharged at the head end of the machine. At this point the material is spouted to a storage hopper from where it is directed into the cars and delivered to the plant or from where a boom conveyor may dispose of the material in one of several different ways.

"The Adel Excavator is being successfully used in the excavating of hard shale and chalk rock and other materials of about the same nature. It is essential that the material be hard enough that the bank will stand up without being supported and without the danger of caving. It is at this point that it is necessary to cite the advantage of the vertical cut machine, inasmuch as it can be appreciated that the face of the bank is not greatly affected by the weather. This makes it possible to operate the machine in practically any kind of weather with equally satisfactory results. This fact, alone, eliminates the necessity of carrying large reserve supplies of raw material on hand, to operate the manufacturing plant thru a period when other methods of excavation could not be carried on.

"These excavators are manufactured to suit requirements and have been furnished for banks where the cutting is from 40 to 60 feet high and where the radius is 36 to 54 feet, respectively. The capacity ranges between 50 and 75 tons per hour, depending on the class of material being excavated.

"The construction of the Adel Excavator is extremely heavy and structural steel members and steel castings have been used where the strains are severe."—*Aadapted from "The Labor Saver," issued by Stephens-Adamson Mfg. Co., Aurora, Ill., who will welcome inquries for additional information.*

⁂

"ONE MAN EXCAVATOR"

The latest booklet issued by the Bay City Dredge Works reproduces a number of interesting testimonials from clay products manufacturers. One concern writes: "We have a tough, sticky wet clay to load. We also get a good mixture of clay, which helps in the drying."

Another user after telling how the excavator gets out in about half a day enough material from a hard tough bank for a daily run of 32,000 brick, states: "An added feature which has greatly appealed to us is the perfect mixing from bottom to top of the various clay strata with every dipper, making an improved and more uniformly finished product."

It is evident from the reports of users that this clay digger, or "One Man Excavator," has a future in the industry. It is particularly adaptable for the medium capacity plant, and the Bay City Dredge Works, Bay City, Mich., will be glad to send full particulars.

⁂

HOW IS IT DONE AT YOUR PLANT?

There is no more important operation on the clay plant than the winning of the clay and for this reason too much prominence cannot be given the various types of shovels and excavators, and the literature covering them.

The Thew Shovel Co., Lorin, Ohio, are issuing their new

Shovel Is Dumping a Little Over 17 Ft. On An Average—A Good, Consistent Dumping Height.

catalog in sections, and the first section is now ready for distribution. This is known as Bulletin 111 and covers their Type O steam shovel, bringing out its special features such as "higher dump," "longer reach," and "greater adaptability."

The accompanying photograph illustrates the high dump, altho it is by no means an example of the maximum dumping height.

You will want to have opportunity to read this bulletin, and the Thew Shovel Co. will send one on request.

* * *

PLYMOUTH GASOLINE LOCOMOTIVE

The Fate-Root-Heath Co. have prepared special bulletin covering the use of the Plymouth Locomotive in about a dozen leading industries, where equipment of this type is required, including the clay products industry, and then fastened them together in a loose leaf binder. It is a neat and handy arrangement whereby interested parties can be furnished either with the complete set, or with any one particular bulletin desired.

The section devoted to the clay product field is designated as Bulletin E, Catalog No. 4, and includes attractive illustrations of Plymouths in fifteen different plants with a brief story regarding each.

It also gives a partial list of Plymouth owners in all parts of the country, so that purchasers can easily arrange to see one of these locomotives in operation. Address The Fate-Root-Heath Co., at Plymouth, Ohio.

* * *

AS TOLD BY THE CAMERA

A neat little booklet entitled, "Camera on the Trail of the American Gas-O-Motive" or "Doing Beats Promising" is being distributed by The Hadfield-Penfield Steel Co., Bucyrus, Ohio. As explained in the foreword, the purpose is to show what the American Gas-O-Motive is doing in the way of actual work. The camera could not reproduce the reductions in haulage cost, cuts in repairs, labor costs, etc., but a complete catalog issued by The Hadfield-Penfield Steel Co. gives these additional facts and figures. They would appreciate the opportunity to demonstrate.

* * *

"DUMPERS WANTED"

The Lancaster Iron Works, Inc., Lancaster, Pa., have issued an interesting and attractive four page circular under the above caption, pointing out the advantages of the Auto Brick Machine. It performs the work of tempering and pressing the clay, bumping the moulds with absolute uniformity, dumping the brick on pallets, delivering the pallets of brick to truckers or onto a cable conveyor and putting the empty moulds into the sander, where they are properly sanded. Then the moulds are automatically delivered to the machine to be refilled.

They also have a new catalog which more fully describes the Auto Brick Machine and will be glad to mail it on request.

* * *

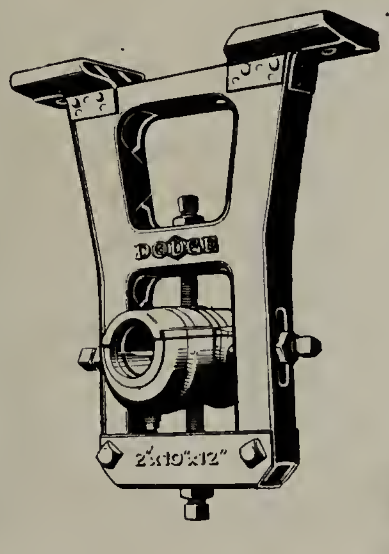
The Stevenson Co., of Wellsville, Ohio, are showing evidence of the renewed demand for machinery and equipment of every kind by reason of the fact that their plant is running at full capacity. The demand is equally distributed amongst all their products—crushers, fans, and sewer pipe presses.

* * *

The Dodge Sales & Engineering Co., of Mishawaka, Ind., announce they have perfected, after two years' experimentation in construction and design, a pressed steel hanger for general-purpose use. It represents the most advanced development in general purpose hanger construction under conditions which permit its use and where extreme vibration is not a factor.

In offering to power transmission users the pressed steel hanger, the Dodge organization does not unreservedly endorse steel hangers regardless of their construction for every purpose, but they simply recognize a demand for a limeshaft hanger of lightness and strength to serve under conditions not severe or unusual and where first cost is of guiding importance.

The Dodge Pressed Steel Hanger is now available thru Dodge, Oneida and Keystone dealers on an immediate delivery basis.



Distance Is Eliminated

Where STANDARD CONVEYORS are used there is no such thing as distance.

The slow and costly methods of manual handling are abolished. Common labor costs are cut to the minimum and skilled laborers are kept busy. There is no more delay waiting for materials.

And remember this is all done by GRAVITY—the universal FREE power. Decide today to take advantage of it.

Write for complete information.

STANDARD CONVEYOR CO.
NORTH SAINT PAUL
MINNESOTA

Trade Names Now in Use
on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.
ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.
ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.
ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.
ARKATEX—Southern Building Products Co., Little Rock, Ark.
ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.
ART-TEX—W. E. Loomis, Sherbrooke, P. Q.
ARTISTICO—Capital Clay Co., Des Moines, Ia.
ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.
ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.
BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.
BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.
BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.
BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.
BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.
BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.
CALEDONIAN—Fiske & Co., Inc., Boston and New York.
CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.
CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
CLAYTEX—Walton N. Cable, New York City.
CLAYTON MISSIONS—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
CLAYTON VELVETS—Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.
CLOISTER—Western Brick Co., Danville, Ill.
COLONIAL—Capital Clay Co., Des Moines, Ia.
CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.
CORALTONE—Harris Brick Co., Zanesville, O.
CORALROSE—Harris Brick Co., Zanesville, O.
COLUMBIA—Columbia Clay Co., Columbia, S. C.
CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.
CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.
CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.
CROWN—Green Fire Brick Co., A. P., Mexico, Mo.
DENISON—Mason City (Ia.) Brick & Tile Co.
DE LUXE—The Standard Brick Company, Crawfordsville, Ind.
DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.
DORIC—Western Brick Co., Danville, Ill.
DUNBAR—United Refractories Co., Uniontown, Pa.
EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.
E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.
ELKCO—Elk Fire Brick Co., St. Marys, Pa.
ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.
ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.
EMBOSTEX—Streator (Ill.) Brick Co.
EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo
EMPIRE—The Minor Fire Brick Company, Empire, Ohio.
EMPIRE—Western Brick Co., Danville, Ill.
EVERHARD ANTIQUE—Everhard Co., Massillon, O.
EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.
EVERHARD DOUBLE-TEXTURE—Everhard Co. Massillon, O.
EVERHARD FERN-LEAF—Everhard Co., Massillon, Ohio.
EVERLASTING—Mason City (Ia.) Brick & Tile Co.
FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.
FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.
FISKLOCK—Fiske & Co., Inc., Boston and New York.
FRASERCLAY—Fraser Brick Co., Dallas, Texas.
F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.
F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.
F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.
FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG ROUGH TEXTURE—Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.
FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.
FULTONHAM-TEXTURE — Fultonham-Texture Brick Co., East Fultonham, Ohio.
GLONINGER IRON SPOTS—Gloninger & Co., Pittsburgh, Pa.
GOTHIC—Western Brick Co., Danville, Ill.
GREENDALES—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.
GRID—Fiske & Co., Inc., Boston and New York.
HAWK-I-TEX—Capital Clay Co., Des Moines, Ia.
HAYES RUN—Hayes Run Fire Brick Co., Orviston, Pa.
HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston, Pa.
HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
HI-GRADE—Southwest Building Supply Co., Springfield, Mo.
HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.
HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.
HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.
INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.
IRONCLAY—Iron Clay Brick Co., Columbus, O
IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.
KELSO—Hayes Run Fire Brick Co., Orviston, Pa.
KEYSTONE—Elk Fire Brick Co., St. Marys, Pa
LADLE—The Zoar Fire Clay Company, Zoar, Ohio.
LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.
LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.
LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.
LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.
LOXALL—Exner, J. E., Coffeyville, Kan.
M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.
MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.
METALTEX—Columbia Clay Co., Columbia, S. C.
MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.
MINOR—The Minor Fire Brick Company, Empire, Ohio.
MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.
MOBRIQUE—Harris Brick Co., Zanesville, O.
MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.
MOSAIC—Western Brick Co., Danville, Ill.
NATIONAL—The National Fire Brick Company, Strasburg, Ohio.
NAVAJO—Kansas Buff Brick & Mfg. Co.. Buffville, Kan.
NO. 1—J. H. Gautier & Co., Jersey City, N. J.
NUVOGUE—Boone (Ia.) Brick, Tile & Pav Co.
OIL—J. H. Gautier & Co., Jersey City, N. J.
OLD HOMESTEAD—Burton-Townsend Co. Zanesville, Ohio.
OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.
OLEAN BLOCK—Sterling Brick Co., Olean N. Y
ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.
OXFORD—Southern Brick and Tile Company, Louisville, Ky.
PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.
PERSIAN SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
POS-TEX—Poston Brick Co., Springfield, Ill
POTOMAC-SAVAGE—Savage Mountain Fire Brick Co., Frostburg, Md.
"POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.
PROMENADE—Yingling-Martin Brick Co., Johnsonburg, Pa.
RAINBOW — Burton Townsend Co., The Zanesville, Ohio
RED ROCK RUFFS—Auburn Shale Brick Co. Auburn, Pa.
ROTEX—Elk Fire Brick Co., St. Marys, Pa. Gettysburg, Pa.
ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.
RUBYTEX—Columbia Clay Co., Columbia, S. C.
RUFTEX—Thomas Moulding Brick Co., Chicago.
RUG—Hocking Valley Pro. Co., Columbus, O.
RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.
ST. MARYS—Elk Fire Brick Co., St. Marys, Pa.
SAVAGE MOUNTAIN—Savage Mountain Fire Brick Co., Frostburg, Md.
SHALE-TEX—Streator (Ill.) Brick Co.
SIL-O-CEL—Celite Products Co., Chicago, Ill.
S. M.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. A.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. EXTRA—Savage Mountain Fire Brick Co., Frostburg, Md.
SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.
SPEEDWAY BLOCK—Alliance (O.) Clay Prod. Co.
STANDARD—Green Fire Brick Co., A. P., Mexico, Mo.
STANDARD—The National Fire Brick Company, Strasburg, Ohio.
TAPESTRY—Fiske & Co., Inc., Boston and New York.
TAVERN BRICK—Metropolitan Pav. Brick Co., Canton, O.
TEXTUR—Thomas Moulding Brick Co., Chicago, Ill.
TIFFANY—Thomas Moulding Brick Co., Chicago, Ill.
TORONTO—Toronto Fire Clay Co., Toronto, O.
TOWNSEND BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
TURKESTAN—Beaver Clay Mfg. Co., New Galilee, Pa.
TURKO—Rochester (Pa.) Clay Products Co.
UNITED—United Refractories Co., Uniontown, Pa.
U. R. CO.—United Refractories Co., Uniontown, Pa.
U-TEX—Fultonham-Texture Brick Co., East Fultonham, Ohio.
VERTEX—Beaver Clay Mfg. Co., New Galilee, Pa.
VITRI-CRAFT—Schuylkill Valley Vitrified Products Co., Oaks, Montgomery Co., Pa
VOLCANIC—Beaver Clay Mfg. Co., New Galilee, Pa.
WATERPROOF—Gloninger & Co., Pittsburgh, Pa.
WIRE-CUT-LUG BRICK—Dunn Wire-Cut Lug Brick Co., Conneaut, Ohio.
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BRICK and CLAY RECORD

Established 1892. Now in its twenty-ninth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by

Industrial Publications, Inc.

Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland

Address all communications to home office

Chicago, February 21, 1922
Vol. 60 No. 4

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Prepare for the Coming Coal Strike

THE GENERAL OPINION regarding the outlook for building in 1922 seems to be that spring and summer will bring with them considerable work. This opinion is also substantiated by the survey recently made by the Architectural Forum among its subscribers, which indicates that $4,100,000,000 worth of building is on the potential list. This figure may be somewhat optimistic, but it does indicate, nevertheless, that there will be building during the coming year.

In view of the above facts, it is important that everything be gotten in readiness so that when the period of activity arrives, there will be nothing to hold it back. The clay industry is all ready to start, but there looms on the horizon one enemy to quantity production. That is coal. The coal problem is a hard one to solve and contains many conflicting angles. In the first place, there is the possibility of a strike in the bituminous coal mines on the first of April, which would make it seem a good policy to store a sufficient quantity of coal to tide the manufacturer over such a period of disturbance. But no one can with certainty predict whether or not a strike will occur, in fact, it is doubtful whether even union leaders themselves know what their organizations will be in a position to do when April 1 arrives. The union mine worker is in no amiable frame of mind, as his earnings have been greatly curtailed thru lack of work during the last year, and it is safe to say he would be willing to put up a strong fight to back up his demands.

There is, however, another angle to this situation. The union mine worker during the past year has had to watch the miner in the non-union bituminous fields work steadily, while he himself has been idle for a considerable part of the time. It is, of course, hard to imagine the non-union worker giving any considerable support to any strike movement on the part of the unions, and it is therefore questionable whether the union worker will go as far as is generally thought.

Then there is another perplexing angle to the coal situation. Hearings now in progress before the Interstate Commerce Commission may result in a reduction in freight rates on coal. Should such a reduction occur, no plant would care to have on hand large supplies of coal purchased at the higher prices. That any reductions on coal rates will be effective before April 1 is a possibility, but it is not a very great factor, since it will be practically impossible for the Interstate Commerce Commission to revise coal rates generally so that they would take effect before April 1. In view of this situation, the question as to whether or not to stock coal before the strike cannot be influenced by the probability of lower rates.

In an industry such as the manufacture of clay products, where an adequate coal supply is vital to the continued operation of the plant, the management should take every precaution to be prepared for the strike. Granting that there is a possibility of a reduction in coal freight rates, it would certainly not be worth while to risk production while the strike lasts at a time when the demand for clay products would reach a maximum height.

The advice to purchase in sufficient quantities to insure production thruout the bituminous coal strike period would seem to be good, unless the price of coal should suddenly become prohibitive because of a widespread movement to purchase coal resulting in a tax on the production capacity of the bituminous mines.

* * *

Secretary Hoover Gives Advice

IN THIS ISSUE of Brick and Clay Record there are two articles which once again forcibly bring to our attention the capability of our Secretary of Commerce, and his ability to go straight to the heart of the complex problems confronting industry. His address before the Interstate Commerce Commission, which is published in part in this issue, was a masterful presentation in a clear and concise manner of the problems confronting the railroads. His outline of the situation prevailing in the railroads today reflects the working of a logical and incisive mind.

This talk of Secretary Hoover's is more than just a mere analysis of the railroad situation. It also outlines the significance and importance to industry in general of the railroads's welfare. The attitude of Secretary Hoover seems to be to bend every possible effort to place our railroads on a sound financial basis at the earliest possible time and other industry will automatically follow.

It is refreshing to hear a public official in as high an office as that of Secretary of Commerce, offer such a definite and instructive program for the country to follow. It is especially gratifying inasmuch as we have become more or less accustomed to hearing high public officials *talk* much—but *say* little.

* * *

Prospects for Building in 1922

A COMPREHENSIVE SURVEY among architects made by Architectural Forum, a trade paper read by those in the profession of designing various structures, brought to light some very interesting figures on building. These are published on other pages of this issue.

The survey estimated something like $4,100,000,000 worth of construction is being planned by the architects' of this country. This value is over 2½ times the amount of building ever done in any one year in the history of this country. But of course it does not follow that because this amount of building is contemplated, that all of it will go ahead. It is difficult to prophesy how much of it actually will be under construction during the coming year.

Men are not in the habit of paying architects' fees for the sake of putting their dreams on paper. Most of them expect to use the plans in the near future. But if we assume that only one-third of this $4,100,000,000 worth of construction will go ahead, and that if to this would be added the amount of building not handled by architects, and that which come up during the course of the year and carried on to completion, the figure will still be very considerable.

A great part of this year's construction will be confined to residential building. It is the residential building which is often not handled by the architect, the plans frequently being obtained from lumber associations, dealers, and other places such as our own face brick, common brick and hollow tile associations. The lower the cost of building, the more nearly will this over four billion dollars worth of construction be completed this year. But at any rate, the outlook is indeed favorable.

A Bit of Cheer for Clay Manufacturers

Survey of Architectural Forum Shows $4,100,000,000 Worth of Building Contemplated for 1922—Clay Products Lead Building Materials

NUMEROUS STATEMENTS have been issued with respect to the coming building boom and a period of prosperity in the building construction industry. There are those who argue both pro and con, and each side has prominent supporters. A well known economist recently issued a statement to the effect that the cost of new building has not yet reached bottom, and that construction costs are only partly deflated. He predicts a further drop sometime in the next year or two.

While it is undoubtedly true that the index figure for construction costs still remains at a higher level than other indices, there is a very good reason for this. It is explained by the continued high labor wages paid in the building trades, by the high price of coal, which is largely used in the manufacture of building materials, and by high freight rates.

Demand for Building Is Great

Granting that there are possibilities of lower construction costs later on due to reductions in freight and wage rates, and that many will await such reductions, there still are a great number who cannot and will not wait any longer.

The demand for building is so great in hundreds of instances that cost is only of a secondary importance. Besides, building costs have come down a great deal from the peak and the point of stabilization of building costs is not so far off as to cause much difference.

That such is the view of thousands is shown by the results of a remarkable survey made by The Architectural Forum. The method of this survey was to obtain from a very large number of typical architectural offices in every section of the country, a report covering the classification and valuation of all buildings in each office for which plans have been drawn and construction is pending or on which plans are being worked out for construction, as building costs become more stabilized. Reports were received from 955 architectural offices, and the results classified by states and by character of building are shown in an accompanying table. In the first column are shown by states the number of architectural offices subscribing to The Architectural Forum, a total of 4,463. Nearly $884,000,000 worth of buildings were reported by those architects who responded.

The Architectural Forum assumed that their subscription number is approximately equal to all of the architectural

BUILDING PROJECTS PENDING IN ARCHITECTURAL OFFICES

State	Architectural Offices			Value of Prospective Construction, by Classes, Thousands of Dollars										
	Total	Reported	Per Cent Reported	Dwellings	Apartment Houses	Hotels	Schools	Churches	Hospitals	Public Buildings	Office Buildings	Industrial Buildings	Public Garages	Total
Alabama	26	5	19	400	150		575	485	75	190	400	40	50	2,365
Arizona	9	2	22				750	100	150	1 050	400			2,450
Arkansas	15	3	20	102	165	275	230	100	250	17	100	200		1,439
California	315	49	16	3,614	6,296	2,763	6,042	1,438	1,438	4,410	701	2,040	2,444	31,171
Colorado	47	13	28	417	960	2,250	1,720	535	640	485	600	395	170	8,172
Connecticut	74	26	35	1,122	656	12	2,090	375	100	1,830	911	1,875	122	9,093
Delaware	10	0	0	-	-	-	-	-	-	-	-	-	-	-
Dist. of Colum.	74	9	12	1,169	7,237		727	10,145		1.025	2,155		100	22,556
Florida	20	12	60	716	4,250	4,250	16	418	6	47	693	96		10,492
Georgia	53	7	13	205	210	450	129	535	150	775	750	100		3,304
Idaho	15	4	27	132	130	675	720	130		150	80	50		2,067
Illinois	361	48	13	2,596	9,673	15,150	7,020	6,587	2,000	11,004	22,385	10,571	1,647	88,633
Indiana	96	38	40	2.019	2,801	3,300	5,835	1,897	2,140	3,065	1,960	1,260	429	24,702
Iowa	68	21	31	1,033	3,315	1,090	4,781	11,105	890	3,455	3.185	670	120	29,644
Kansas	52	15	29	651	425	475	2,080	730	195	3,825	485	82	255	9,203
Kentucky	37	9	24	780	650		280	290	12	450	60		18	2,540
Louisiana	48	8	17	508	143	650	90	130	80	300	152	70	39	2,161
Maine	20	4	20	202	600	475	850	104						2,231
Maryland	58	11	19	414	1,012		980	512	175	3,675	400	540	309	8,017
Massachusetts	288	50	17	2,973	3,402	3,000	9.595	773	10,112	2,135	6,363	3,199	1,310	42,862
Michigan	226	32	14	3,366	2,185	1,800	3,060	5,335	1,390	2,782	5,020	2,071	1,581	28,590
Minnesota	157	44	28	1,990	2,901	2,615	8,226	2,599	1,750	1,445	4,335	3,068	539	29,468
Mississippi	6	1	17	31	52		75	15					95	268
Missouri	155	34	22	2,841	6,090	2,810	1,785	1,615	3,286	3,549	1,380	2,863	468	26,687
Montana	17	7	41	86	460	1,395	2,295	55	505	240	200	130	100	5,466
Nebraska	53	14	26	877	1,630	1,060	3,330	1,775	765	2,770	170	650	390	13,417
Nevada	2	2	100	128	190	500		25	30		225	50		1,148
New hampshire	14	3	21	164	40		410	50	556	47	12	200	240	1,719
New Jersey	140	39	28	3,860	2,514	1,835	7,555	5,715	390	3,375	515	2,575	768	29,102
New Mexico	6	3	50	260	25	144			125	65	75		30	724
New York	669	148	22	16,955	16,257	15,620	24,530	6,790	11,315	10,348	20,630	7,963	1,550	131,958
No. Carolina	36	9	25	496	670	1,065	130	710	285	25			215	3,596
North Dakota	13	5	38	444	100	115	1,070	570	135	505	30	236	390	3,595
Ohio	294	57	19	4,797	6,388	7,825	6,030	4,866	6,250	4,715	5,277	3,368	1,268	50,784
Oklahoma	45	10	22	755	910	1,600	1,230	640	1,110	525	340	330	1,620	9,060
Oregon	52	12	23	465	185	665	305	540	635	2,020	395	1,175	230	6,615
Pennsylvania	354	69	20	7,165	8,413	14,655	10,315	18,015	7,150	3,695	12,627	8,566	1,775	92,376
Rhode Island	25	7	28	639	1,005		1,760	730	130	285		182	256	4,987
So. Carolina	24	5	21	532	50		120	15	75	75	55	48	50	1,020
South Dakota	3	3	100	179	50	65	551	15	175	195	15		60	1,300
Tennessee	39	7	18	454	373	60	478	420	460	100	150	325	115	2,935
Texas	118	27	23	1,755	1,623	1,965	3,865	3,365	1,770	2,402	584	1,864	305	19,498
Utah	32	7	22	345	715	750	1,125	810	350	914		135	109	5,253
Vermont	2	2	100	75	100	50	50			605	180	25		1,085
Virginia	39	10	26	1,222	810		2,345	281	430	1,800	3,635	340	125	10,988
Washington	104	25	24	1,487	2,666	1,455	6,795	1,135	1,921	1,892	3,800	667	290	22,108
West Virginia	31	13	42	417	960	2,250	1,720	535	640	485	600	395	170	8,172
Wisconsin	116	23	20	2,394	2,687	500	4,760	1,720	590	1,918	1,260	650	633	17,112
Wyoming	6	3	50	143	80	30	850	300	20	475	165		100	2,163
Total	4463	955	22	74,494	102,395	93,599	138.683	94,505	63,688	81,361	105,328	59,773	19,803	883,625

Survey Prepared by the Architectural Forum, from Information Secured from Subscribers, Showing Building Projects in Architects' Offices Waiting to Go Ahead.

Prospective New Building Construction

(Figures in millions of dollars)

State	Reported	Total Estimated
Illinois	88.6	666.0
New York	132.0	596.0
Pennsylvania	92.4	474.0
Ohio	50.8	261.6
Massachusetts	42.9	247.0
Michigan	28.6	201.8
California	31.2	200.3
D. C.	22.6	185.6
Missouri	26.7	121.6
Minnesota	29.5	105.0
New Jersey	29.1	104.5
Iowa	29.6	96.0
Washington	22.1	90.0
Wisconsin	17.1	86.3
Texas	19.5	85.1
Indiana	24.7	62.4
Nebraska	13.4	50.8
Virginia	11.0	42.9
Maryland	8.0	42.2
Oklahoma	9.1	40.8
Kansas	9.2	31.9
Colorado	8.2	29.5
Oregon	6.6	28.6
Connecticut	9.1	25.9
Georgia	3.3	25.0
Utah	5.3	24.0
West Virginia	7.5	17.9
Rhode Island	5.0	17.8
Florida	10.5	17.5
Tennessee	2.9	16.4
North Carolina	3.6	14.4
Montana	5.5	13.3
Louisiana	2.2	13.0
Alabama	2.4	12.3
Maine	2.2	11.2
Arizona	2.5	11.0
Kentucky	2.5	10.5
North Dakota	3.6	9.4
New Hampshire	1.7	8.0
Idaho	2.1	7.7
Arkansas	1.4	7.2
South Carolina	1.0	4.9
Wyoming	2.2	4.3
Mississippi	.3	1.6
New Mexico	.7	1.5
South Dakota	1.3	1.3
Nevada	1.1	1.1
Vermont	1.1	1.1
Delaware No report		
	833.9	4128.2

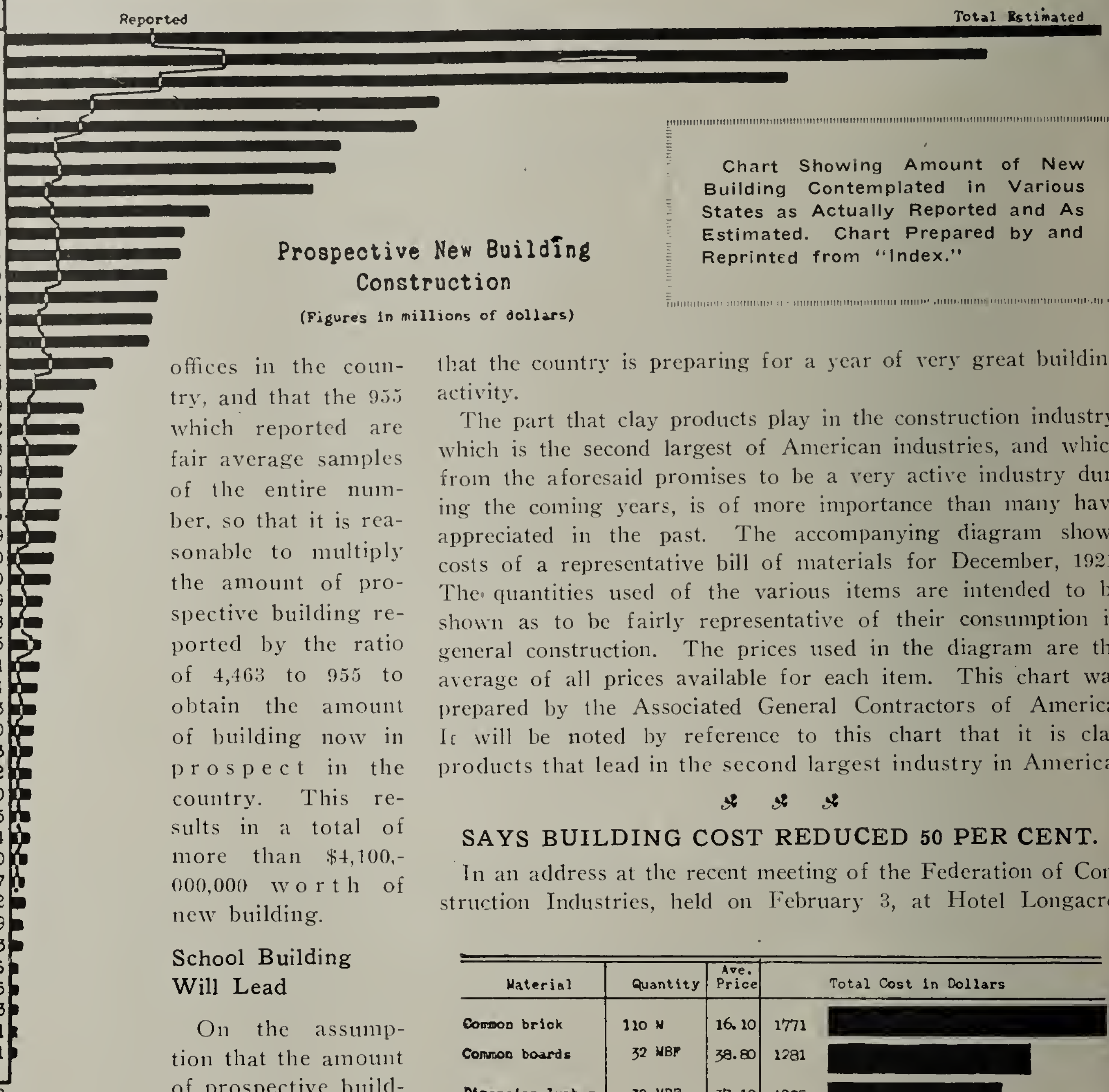


Chart Showing Amount of New Building Contemplated in Various States as Actually Reported and As Estimated. Chart Prepared by and Reprinted from "Index."

offices in the country, and that the 955 which reported are fair average samples of the entire number, so that it is reasonable to multiply the amount of prospective building reported by the ratio of 4,463 to 955 to obtain the amount of building now in prospect in the country. This results in a total of more than $4,100,000,000 worth of new building.

School Building Will Lead

On the assumption that the amount of prospective building in each state may be probably computed on the basis just indicated, a diagram has been prepared in which is shown the amount of building reported and the total estimate for each of the states, arranged in the order of magnitude. This shows an enormous range in amount of prospective building, the figure for Illinois being 600 times that of Vermont, and the other states ranging in between these figures.

In the country as a whole and in most sections of the country, school buildings constitute the biggest single item of the contemplated construction. In all districts, industrial buildings constitute a relatively small portion of the proposed building while nearly everywhere apartment houses and office buildings are rather prominent.

The total estimated valuation of permits issued during 1921 for 192 cities is $1,707,528,398, and in 1920 in the same cities the valuation was $1,459,862,023. In 1919 for 194 cities the value of building permits was $1,428,423,683. Thus it will be seen that 1921 registered a gain of 17 per cent. over 1920, and slightly more over 1919. The survey by The Architectural Forum, which results in a total of more than $4,100,000,000 worth of new building, is at least 2½ times as great as the sum of the building permits in the 192 principal cities during the year 1921, the year of greatest building.

Clay Products Lead in Material Field

It certainly would be unsafe to assert that building construction during the coming year is to bear any such ratio as that to the building done last year. However, even after making all proper allowances, the conclusion seems inevitable, that the country is preparing for a year of very great building activity.

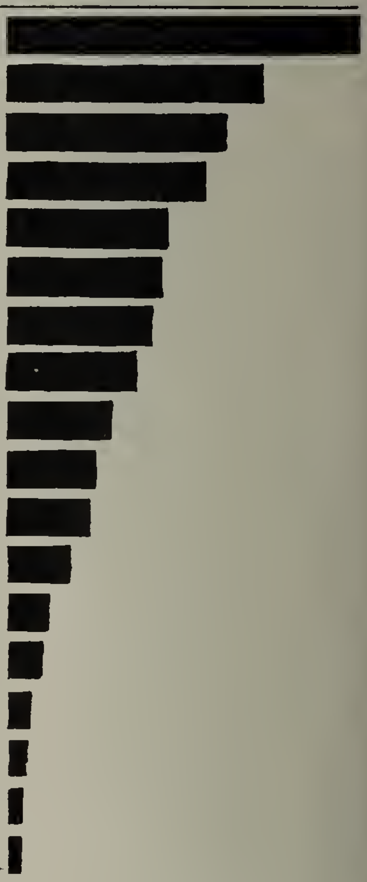
The part that clay products play in the construction industry, which is the second largest of American industries, and which from the aforesaid promises to be a very active industry during the coming years, is of more importance than many have appreciated in the past. The accompanying diagram shows costs of a representative bill of materials for December, 1921. The quantities used of the various items are intended to be shown as to be fairly representative of their consumption in general construction. The prices used in the diagram are the average of all prices available for each item. This chart was prepared by the Associated General Contractors of America. It will be noted by reference to this chart that it is clay products that lead in the second largest industry in America.

* * *

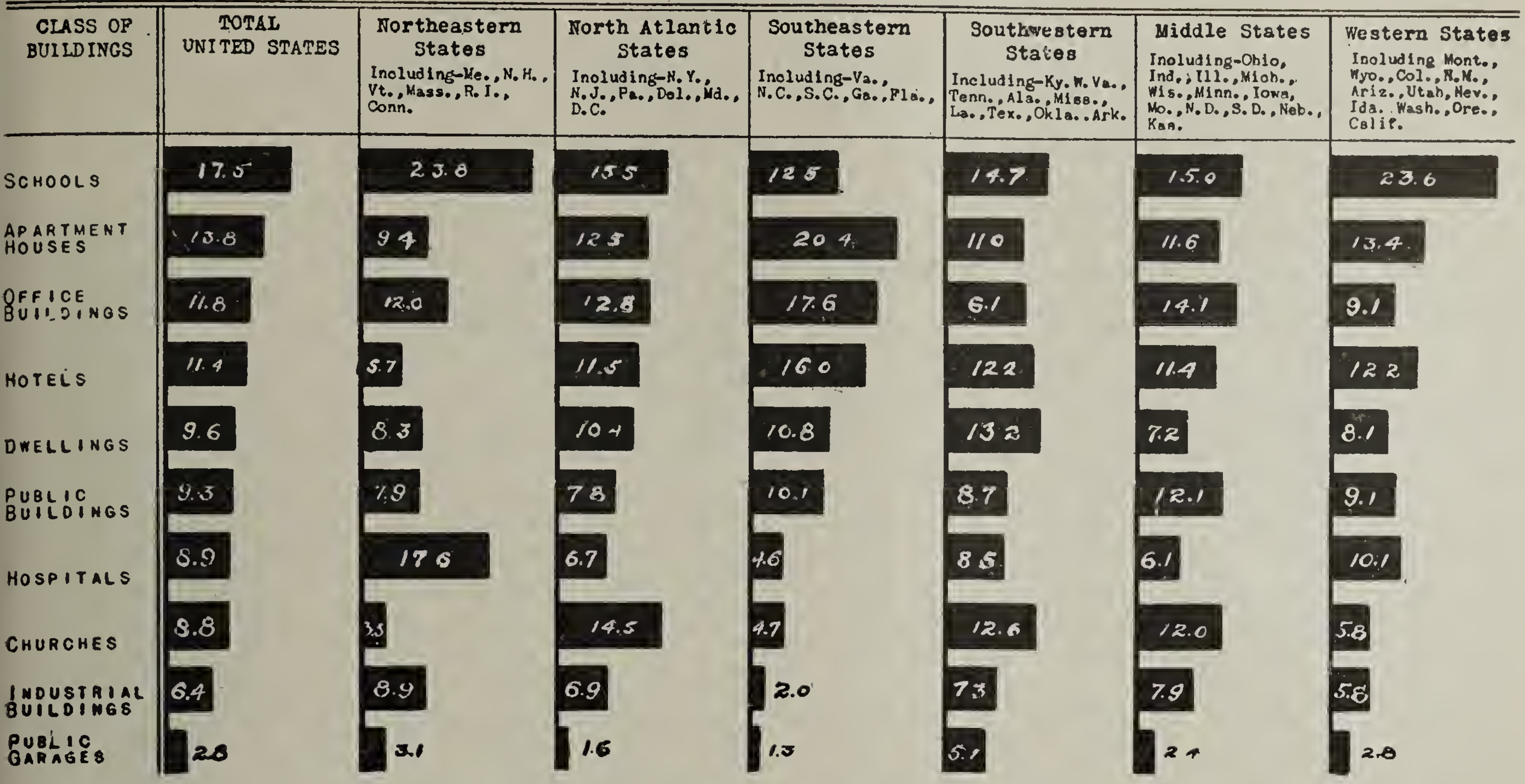
SAYS BUILDING COST REDUCED 50 PER CENT.

In an address at the recent meeting of the Federation of Construction Industries, held on February 3, at Hotel Longacre, Philadelphia, Pa., Walter F. Ballinger, well-known architect of that city, said that the total cost of building at the present time is about 50 per cent. lower than the peak of several months

Material	Quantity	Ave. Price	Total Cost in Dollars
Common brick	110 M	16.10	1771
Common boards	32 MBF	38.80	1281
Dimension lumber	32 MBF	37.10	1085
Structural steel	273 100 lbs	3.61	985
Flooring, pine	10 MBF	79.80	798
Cement	270 bbl	2.80	756
Reinforcing bars	250 100 lbs	2.88	720
Sand	310 cu yd	2.08	645
Steel pipe, 1" galv	53 100 ft	9.82	520
Crushed stone	134 cu yd	3.29	441
C I pipe 4" heavy	8 tons	51.60	413
Shingles, wood	33 100 sq ft	6.97	320
Lime	10 tons	21.15	211
Hollow tile	1000 pcs	.17	170
Glass, single	20 50 sq ft	5.67	113
Zinc oxide	6 100 lbs	14.50	87
White lead	6 100 lbs	11.76	71
Linseed oil	70 gal	.91	63
Total			10450
Total for 1913			6255
1921 Cost in per cent of 1913 cost			167



Cost of Representative Bill of Materials for December, 1921. The Ratio of the Total Cost for Any Month to That of the Same Bill for 1913 Give the Index Number for the Month. Chart Prepared by and Reprinted from "Index."



Classification of Projected Buildings by State Groups

Another Chart Prepared by and Reprinted from "Index" Showing Percentage of Each Class of Buildings Contemplated in State Groups. Chart Prepared from Information Gathered by The Architectural Forum.

ago, and about 50 per cent. higher than in 1913. As an example, he mentioned bids received for the construction of the Chester Hospital, Chester, Pa., in the fall of 1920, totaling $380,000 without equipment, while the same bidder in January, 1922, offered to do the work for $226,000, and the lowest bid at the last noted time took the job at a price of $205,000. Mr. Ballinger holds that the present construction prices are more than favorable for the immediate award of contracts for proposed buildings.

* * *

CARRY LOWER RATE FIGHT TO I. C. C.

Representatives of paving brick manufacturers testified as to the effect of railroad rates in that industry before the Interstate Commerce Commission at Washington on January 26, as part of the general freight rate investigation now being conducted. A 25 per cent. reduction was asked.

O. W. Renkert, president of the Metropolitan Paving Brick Co. of Canton, Ohio, stated that the consumer would benefit by any relief given to the manufacturers. In sections of the country distant from production points, the public has refrained from using paving brick even when they regard it as the most desirable material to use, simply because of the exorbitant haulage cost.

W. H. Terwillinger, secretary of the Purington Paving Brick Co., Galesburg, Ill., took the stand to recommend that the commission remove paving brick from the clay products tariff, because this industry does not enter into direct competition with the other types of clay products to exceed 25 per cent. of the paving brick production. Such action by the commission would be agreeable to the railroads and make possible lower rates on paving brick without affecting other products that are on the tariff. Mr. Terwillinger said that there are 18,000,000 brick stocked in the yards of his company, with only one contract on their books, forcing them to close down.

Maurice B. Greenough, secretary of the National Paving Brick Manufacturers' Association, followed Mr. Terwillinger on the stand. In his opinion, the future of the paving brick industry depends to a great extent upon whether or not the freight rates are cut. Mr. Greenough, speaking for the manufacturers in Indiana, stated that they will face a condition of absolute bankruptcy unless relief is forthcoming.

The Mack Manufacturing Co. of Wheeling, W. Va., was represented by its vice-president, R. T. Hutchins, who expressed the belief that all companies shipping into Eastern territory will regain their lost markets, and that within two years the railroads would receive a greater tonnage of paving brick consigned to Eastern points than ever before, if rates are put into effect that will permit movement of paving brick at the present time.

W. C. Brown, representing the Southern Paving Brick Manufacturers and the Southern Clay Manufacturing Co., stated that the situation in the South is far from encouraging, unless prompt freight reductions are allowed. Every customer in that territory, he added, is expecting such action.

* * *

ONTARIO CLAY MEN TO MEET IN CHATHAM

The executives of the Western Ontario Clayworkers Association recently decided to hold the 25th Annual Convention of that organization in Chatham, Ont., on March 8 and 9. Meetings will be held in the chambers of the Board of Trade and Commerce, upon invitation of that body.

A very informal affair has been planned for this year. Interesting discussions of vital interest to those interested in the manufacture of drain tile will be held. Mr. Ferguson, in charge of drainage work at the Ontario Agricultural College, is expected to be present and to address the gathering on the subject of cooperation between the farmer and tile manufacturer to speed up the consumption of drain tile.

A representative from Sheldon's, Ltd., Galt, is scheduled to present a paper on "Draft—Forced and Induced." There will be a number of machinery and equipment men present and short addresses on various topics by members of the association will be made. One afternoon will be devoted to a "round the room" roll call, and everyone will be expected to say something and to offer suggestions.

There will also be a luncheon at the Sanita Hotel.

Short Items on Subjects

BUILDING IS BRIGHT SPOT IN BUSINESS

The monthly review of business and financial conditions issued by the Federal Reserve Board shows little change during January. At this season there usually occurs a period of slackening in various lines of manufacture, which was noticeable during the month, the report states. The pronounced tendency toward stabilization of prices has continued. Building operations have been unusually well maintained, especially for this season of the year, being about double the number reported for the corresponding month in 1921. A slight increase in unemployment is noted, and attributed largely to seasonal recession.

IMPORTANCE OF COAL IN BUILDING

Coal or fuel oil is an important raw material for construction materials.

Material	Per Cent. Fuel, Rent and Power Are of Cost of Material
Brick	55.6
Lime	46.8
Cement	39.0
Glass	23.8
Iron and Steel	16.8

When the construction business is good the coal business is good. Only about 15 per cent. of the coal produced is consumed in keeping the home fires burning.

CHICAGO HOME SHOW COMPLETE AFFAIR

Tailor-made homes, built to fit the stout or lean purse, and complete in every detail from the grass and flowers on the lawn to the electrical iron and washing machine, with definite information on the cost, is the aim of Chicago's Second Annual Own Your Home Exposition which opens in the Coliseum, March 25.

Nothing like this has been attempted heretofore in building expositions and yet the prospective home builder, who visits such a show, wants to know exactly what it will cost him to build a specific house of brick, frame, stucco, or whatever material he prefers. This the Chicago show proposes to do.

On its artistic side the exposition will surpass anything of a similar nature ever attempted. The chief feature will be a "home beautiful"—in all its features and furnishings complete and ready for occupancy—built in the midst of the home garden designed to show what can be done in landscape gardening.

Grouped about this central exhibit of the completed product will be the exhibits of building materials, equipment such as plumbing, heating, electric and gas appliances, paints, wallpaper, house designs, garden designs, nursery stocks, house furnishings, and so forth. Banks and building and loan associations will have booths where the prospective home builder may inform himself on the various methods of accumulating building funds and how to finance his building operation on the most favorable terms. There will be contractors who will be prepared to tell the visitor just what it will cost him to build the "home beautiful" fully equipped as will be the house which stands in the center of the exposition.

There will be many models of modern houses with demonstrations of the possibilities of various building materials. On all these models definite cost figures will be available and when the prospective home builder has finished his investigation of the show he will have a very definite idea of what he can afford to buy, just what his home investment involves, how he can finance it, and, to the last detail, a picture of what he will have when he moves into his new and own home.

The executive committee is made up of Eilson Compton, Thos. F. Hanley, A. J. R. Curtis, Bartholomew O'Toole, Henry K. Holsman and Chas. P. Thompson. The managing director is Robert H. Sexton.

RATES REDUCED ON OHIO CLAY PRODUCTS

The State Utilities Commissions of Ohio on January 27 ordered the railways of the state to reduce by 25 per cent. their rates on interstate shipments of vitrified sewer pipe, fittings, chimney tops, bases, bonnets, flues, pipes, thimbles and wall copings.

16 ATTEND PAVING BRICK MEETING

One hundred representatives from 16 midwest states attended the annual convention of the Western Paving Brick Manufacturers' Association, which was held at Kansas City, Mo., January 27 and 28. Business sessions convened in the offices of the secretary, G. W. Thurston, 418 Dwight Building, and the banquet on the evening of the 27th was given at the Hotel Baltimore.

Mit Wilhite, Emporia, Kan., president of the Santa Fe route organization; William Townsley of Great Bend; C. W. Oswald, Hutchinson; Harry Jiencke, Independence; James Stanton, Leavenworth, and M. M. Bushong of Pittsburg, Kan., were among the speakers.

MASON BUILDING CHEAP IN CLEVELAND

W. T. Rossiter, general manager of the Cleveland (Ohio) Builders Supply & Brick Co., recently quoted statistics as evidence that mason material prices are lower in Cleveland than in any other large city at the present time. A comparison of the cost of mason material used in a 24x26 foot frame house shows that in Cleveland it would amount to $353.59; Chicago, $395.90; Toledo, $404.02; Cincinnati, 444.70; Pittsburgh, $447.79; Buffalo, $455.65; Detroit, $459.50; St. Louis, $465.58; Columbus, $468.54; Philadelphia, $474.65; New York, $528.08; Boston, $593.83.

The same material in 1914 would have cost $254.03 in Cleveland. This was increased 137 per cent. at the peak of 1920, and now shows an increase of only 39 per cent. over the 1914 price.

Mr. Rossiter states that the building in his city during 1921 was confined chiefly to residences and apartments, schools, paving and sewer work. Commercial and industrial construction was practically at a standstill.

ANNOUNCE ANNUAL A. S. T. M. MEETING

Announcement has been made by the American Society for Testing Materials that the 25th annual meeting of that association will be held on June 26 to July 1, 1922, at Atlantic City, N. J., with headquarters at the Chalfonte-Haddon Hall Hotel.

COMMON BRICK INDUSTRY IS QUIET

According to the monthly digest of conditions in the common brick industry, prepared by the Common Brick Manufacturers' Association of America, details brought out by the current reports show that the season is having its effect on many plants, the number closed is greater than it has been since last spring. During the month of January

# of Current Interest

53,494,000 brick were produced, and almost exactly the same number were shipped from the plants, leaving the stock on hand only slightly reduced from the month previous. The orders on the books are not quite so heavy as a month ago, due, no doubt, to the seasonal conditions. Out of the 105 plants reporting during the month, 62 were shut down. 266,596,000 brick are stored in the yards of these 105 plants, and there are orders on the books for 148,659,000. Production has practically ceased in New York and New England on account of the weather.

U. S. AIDS IN BUILDING 28,135 MILES OF ROADS

The Bureau of Public Roads, United States Department of Agriculture, has just completed a summary of the work done in conjunction with federal aid funds, which shows that since July 1, 1916, a total of 28,135 miles of road have been built thruout the United States. Of this amount, 444.6 miles were constructed of brick at a cost of $49,570 per mile, according to the statement. Graded and drained, sand-clay, gravel, macadam (water-bound and bituminous), bituminous concrete and concrete were the other types of construction as given in the report. The total cost of 28,135 miles of roadway is $496,161,683.43. Federal aid furnished $211,135,376.31 of this sum, an average of $7,500 per mile; the remainder being made available thru the states.

ROAD BUILDERS BOYCOTT MANUFACTURERS

Highway officials of eight states, at a meeting in Chicago in January, agreed to force reductions in the price of road building materials by boycotting the manufacturers. N. W. Watson, state highway engineer of Kansas, has announced that the state will not approve estimates on cement and brick for federal aid projects unless there is a 25 cent reduction on the former and a 20 per cent. cut on the latter from the prices of last year. It is planned by such action to force material prices to the new levels or federal aid road projects will stop.

"It is not our purpose to stop road building in Kansas," Watson said, "but it is our duty to the state to protect the taxpayers and persons in road benefits districts from extortionate prices. The estimate we have fixed will stand until cause can be shown the commission why it should be changed."

BRICK ROAD SERVES 23 YEARS

A road that has been in constant service for 23 years with never any repair work, and still in almost as good condition as the year it was laid, is one of the wonders of the paving world. This road is of vitrified brick laid upon a dry base a distance of 3,875 feet, and is located in Douglas County, Neb. This part of what is now the Denver highway was the first bit of hard-road paving launched in the county, and was in the nature of an experiment. Under the increasing amount of transcontinental traffic and enormous truck traffic between Omaha and adjacent towns, this road has stood up and is today the one pleasant stretch of pavement in the 14 mile drive from Omaha and Millard.

PAVING BRICK PRODUCTION INCREASING

In contrast to the uncertain outlook which prevailed a year ago in the paving brick industry, manufacturers are looking forward to 1922 with confidence. Most paving brick plants are running at present, while a year ago 40 per cent. were shut down. From 240,000,000 brick shipped in 1918, the low point, shipments have risen to about 375,000,000 for 1921. Normal output of plants is still short from 75,000,000 to 100,000,000 brick.

The paving brick industry has recovered its short haul markets, but recovery of the distant market depends upon freight rate reductions.

The standardization program recently entered into by mutual consent, in which the number of varieties of paving brick was cut from 66 to 11, is regarded as a movement of far-reaching benefit to consumers and manufacturers alike.

ASPHALT ROADS GET HOTTEST

A comparison of the temperature of pavements in hot weather, made in Chicago, disclosed that asphalt was hottest, with a temperature of 124, brick 118, and concrete, 114 degrees.

HOW LABOR COST IS DISTRIBUTED

The new Division of Building and Housing of the Bureau of Standards, U. S. Department of Commerce, has released its survey of how labor costs are divided by trades in six-room houses.

While this study represents several hundred projects, other data is desired from all parts of the country. The division also wants information on the distribution of material costs by materials, which survey will also be released as soon as more data is received.

Total Labor Costs—100 Per Cent.

Trade	Frame House	Brick House
Carpenters	49.6	32.2
Bricklayers	6.2	21.5
Hod Carriers	2.2	6.7
Plasterers	7.9	8.8
Plumbers	8.7	7.6
Electricians	2.6	2.5
Painters	10.0	6.3
Common Laborers	6.3	9.9
All others	6.5	4.5
Total	100.0	100.0

BUILDING GAINS $30,000,000

Figures compiled by the F. W. Dodge Co. on the amount of construction contracts awarded during January, 1922, indicate that this year starts out better than 1921. Contracts awarded in territory east of the Missouri and north of the Ohio Rivers total $143,278,100, as against $111,807,000 for January 1921, a gain of more than $30,000,000.

NEXT DRAIN TILE MEETING APRIL 11

The regular quarterly meeting of the Ohio Drain Tile Association is scheduled to be held at Lima, Ohio, April 11. At that time questions of freight rates and advertising the industry will be discussed.

STUDYING COLLOIDAL MATERIALS

In the course of the physiochemical studies being conducted at the Columbus (Ohio) Ceramic Experiment Station of the U. S. Bureau of Mines colloidal material in clays has been separated and is being studied both qualitatively and quantitatively, the ultimate aim being to determine the effect of the several colloids found in clay on plasticity.

Canadians Optimistic Over Future

Extreme Interest Shown Thruout Sessions at Canadian National Clay Products Association Convention—Organization Showing Marked Progress

DESPITE THE FACT that 1921 as a good business year was found wanting in many respects, the 20th Annual Convention of the Canadian National Clay Products Association, held February 7, 8 and 9 at the Carls-Ritc Hotel, Toronto, was a distinct success. Approximately 100 clay products manufacturers journeyed to Toronto to be on hand during the convention. These manufacturers displayed great faith in the future of the industry, and the keynote of the meetings seemed to be "Prepare for bigger business to come."

Altho the C. N. C. P. A. is not a young association, as is evidenced by the fact that this is its 20th annual meeting, it is nevertheless not an old-fashioned organization, but has kept pace with the times. As the association has advanced, so have also the individual members, and the representative plant in Canada is now a modern, up-to-date affair making and marketing clay products in large quantities. Ideas brought forth during the meetings show that development in the clay products industry in Canada, altho it has been slow in the past, is now proceeding much more rapidly.

C. A. Millar Welcomes Delegates

The meeting was called to order on February 7 by President Ryland H. New, who introduced Charles A. Millar, chairman of the entertainment committee. Mr. Millar in his address of welcome extended the heartiest greetings of the association to all members and guests present, expressing the hope that the convention would be of some benefit.

In his address as president of the association, Ryland H. New aptly stated one of the real benefits which a convention brings out when he said, "If each delegate learns only one thing which will give him an insight into a way to better his own product, the convention will be an undoubted success."

Mr. New said that the time has come when we must look ahead and broaden out in all lines of work. The secret of going ahead successfully is to look back and profit by our own mistakes and the mistakes of others. With the improvement of building conditions, he stated, the demand for clay products will become greater and manufacturers should strive to produce the best possible article. Manufacturers should, however, not be satisfied with merely producing a good article, but should educate others to recognize it as such.

Praises Work of Officers

Mr. New had much praise for the secretary, Gordon C. Keith, and other members of the executive committee, who, he said, performed their work faithfully and have done much to bring the association to its present high standing.

He touched on a thought which has been uppermost in the minds of many Canadian manufacturers when he spoke of increased legislation in business.

"During the past few years," Mr. New said, "there has been an increase in legislation tending toward the reduction of hours, fixing of minimum wage, compensation for injuries and general legislation of a social character. The effect of this legislation is to decrease the amount of work done by each individual and to increase the cost of finished products to consumers, and to divert money from capital investment which would in time increase production and provide employment. Insofar as this legislation aims at improved living conditions, and adding to the happiness and comfort of the citizens in whose interests it is passed, it is worthy of support. The vital question is—how far can this tendency be carried safely?"

William Burgess, superintendent of the Don Valley Brick Works, Todmorden, outlined in a comprehensive manner the conveyor system in use at his plant. This system, which is used to handle the raw clay, together with a storage shed, was installed last year and has effected a great saving in labor, as well as providing a uniform quantity of each kind of clay as is needed. His talk was of great interest to the delegates.

W. G. Worcester Speaks

The afternoon session on February 7 was opened with a talk by Professor W. G. Worcester, University of Sas-

Approximately 100 Clay Products Manufacturers Attended the 20th Annual Convention of the katchewan, Saskatoon. Mr. Worcester spoke authoritatively on ceramic work in Saskatchewan. He has gained a thoro knowledge of the clays in that territory thru the expedition under the auspices of the Bureau of Labor and Industries, which he headed. This expedition last summer investigated clay deposits and the commercial possibilities of these deposits.

A very fine talk by W. S. Kupfer, president of the American Dressler Tunnel Kilns, Inc., Cleveland, Ohio, and the Canadian Dressler Tunnel Kilns, Ltd., Toronto, held the interest of the attendants. The subject of his talk was burning face brick at the Bradford (Pa.) Brick & Tile Co. The talk was illustrated with moving pictures and those present gained a clear insight into the burning methods in use at the Bradford plant. Following this talk, George Booth of the Booth Brick & Lumber Co., Ltd., Islington, Ont., presented a paper on tunnel kilns, in which he described the workings of the Booth railroad tunnel kiln. L. Haigh of the Hadfield-Penfield Steel Co., Bucyrus, Ohio, discussed the handling of brick.

The Wednesday morning session was opened with a talk of vital interest to clay men. A. G. Dalzell of the Vitrified Clay Pipe Publicity Bureau, Toronto, spoke on the national importance of the clay industries, in which he set forth the merits of clay products and their indispensability to our existence.

Talk on Building Outlook

"Belts," by S. R. Walsh of the Goodyear Tire & Rubber Co., Ltd., Toronto, followed by a discussion opened by F. R. McCannell of Milton, was the second subject on the afternoon program.

A paper of the deepest interest to the clay products manufacturers present was presented by J. B. Carswell, president of the Canadian Construction Industries. The title of this paper was, "Outlook in the Building and Construction Industries." Mr. Carswell told manufacturers what was in store for them during the coming year. The morning session closed with a paper on "Field Tile in Canadian Agriculture," presented by F. L. Ferguson, B. S. A., of the Ontario Agricultural College at Guelph, Ont.

On Wednesday evening at 6:30 o'clock, the annual banquet of the C. N. C. P. A. took place. This is an event which manufacturers in Canada have come to look forward to, and this year as in other years it was a splendid get-together meeting for the members. Andrew Dods, in the capacity of toastmaster, took charge of affairs and introduced the speakers. These included J. B. Carswell, president of the Building and Construction Industries of Toronto; Mayor Alfred McGuire, Toronto; Alderman W. H. Freeborn, Brantford; Prof. W. G. Worcester, Regina; T. A. Randall, Indianapolis, Ind.; B. E. Bechtel, Waterloo, and Dr. C. T. Currelly of Toronto.

Discuss Pyrometers

"Principles of Thermoelectric Pyrometers" was the first subject to be discussed at the morning session, February 9. A paper on this subject was read by M. R. Hastings of the A. H. Winter-Joyner Co., Toronto. Following this, W. A. Schorman of the British American Oil Co. at Toronto, talked on lubricating oils in clay plants. This subject was discussed by John King of Waterdown. Another subject discussed at this session was time and cost recording, with demonstration of machines by a representative of the International Business Machines, Ltd., of Toronto.

At the afternoon session Edward C. Hanson, consulting engineer for the Penn Canadian Fuel Co., gave a talk on purchasing fuel, with special reference to storage and commercial analysis for determination of values. Discussion on this subject was opened by H. F. Dingledine of Aldershot.

The entire convention was one of extreme interest and all the sessions were well attended. Delegates paid the closest attention to the papers presented.

A splendid program of entertainment was maintained thruout the three day session, and the thanks of the delegates are due the entertainment committee for the efforts put forth.

New Officers

Deliberations of the nominating committee resulted in the re-election as president of Ryland H. New, Hamilton & Ontario Sewer Pipe Co., Hamilton, with the following co-workers: First vice-president, T. H. Graham, Shale Products Ltd., Inglewood; second vice-president, Andrew Dods, Ontario Sewer Pipe Co., Mimico; third vice-president, D. C. Merkley, Merkley Bros., Ottawa; secretary-treasurer, Gordon Keith, 435 Grace Street, Toronto. Councillors, H. H. Hallatt, Tilbury; N. T. Gagnon, Montreal; F. B. McFarran, Toronto; C. B. Lewis, Toronto; Robert New, Hamilton; W. J. Nicholson, Toronto; Ray Price, Humber Bay and C. H. Wallace, Toronto. Chairman Technical Education Committee, William Burgess, Todmorden. Chairman Tile Committee, H. H. Hallatt, Tilbury. Chairman Entertainment Committee, C. A. Millar, Mimico.

List of Attendants

Baines, Wm., Whitby (Ont.) Brick & Clay Products Co.; Bechtel, B. E., Waterloo, Ont.; Berg, Chas. D., Berg Machinery Co., Toronto, Ont.; Berg, John, Berg Machinery Co., Toronto,

Canadian National Clay Products Association. The Above Picture Includes Most of the Delegates.

Ont.; Booth, F. W., Booth Brick & Lumber Co., New Toronto; Booth, Geo., Booth Brick & Lumber Co., New Toronto; Bourdon, J. A. C., St. Lawrence Brick Co., Laprairie, P. Q.; Brooker, F. N., Brooker Engineering Co., Cleveland, Ohio.; Brooks, C. H., Canadian Manufacturer, Toronto, Ont.; Brown, C., Ott Brick & Tile Mfg. Co., Kitchener, Ont.: Burgess, Wm., Don Valley Brick Works, Toronto, Ont.; Busk, H., Inglewood, Ont.; Butwell, Richard, Humber Bay.

Coleman, F., The Hamilton & Toronto Sewer Pipe Co., Ltd., Hamilton, Ont.; Cossins, Robert, Whitby (Ont.) Brick & Clay Products Co.; Chambers, J, F., The Fate-Root-Heath Co., Plymouth, Ohio; Crawford, John, Crawford Bros., Hamilton, Ont.; Curtis, Geo., Curtis Bros., Peterboro, Ont.; Cutbush, Geo., Toronto, Ont.

Dalzell, A. G., Vitrified Clay Pipe Publicity Bureau, Toronto, Ont.; Deverlle, T. G., Whitby (Ont.) Brick & Clay Products Co.; DeWitt, S. C., Federal Engineering Co., Toronto, Ont.; Dingledine, H. F., National Fire Proofing Co. of Can., Ltd., Aldershot, Ont.; Dods, Andrew, Ontario Sewer Pipe & Clay Prod., Ltd., Mimico, Ont.

Elliott, Frank A., International Clay Machinery Co., Toronto, Ont.; Elliott, W. J., Glen Annan, Ont.; Elliott, Wm., W. Elliott & Son, Glen Annan, Ont.

Fletcher, H. G., Garlock Packing Co., Toronto, Ont.; Frid, George, Hamilton, Ont.; Frid, George, Hamilton, Ont.; Frost, George H., Toronto, Ont.

Gibson, David G., Brick & Clay Record, Chicago, Ill.; Govenlock, J. M., Seaforth, Ont.; Graham, D. S., Shale Products, Limited, Inglewood, Ont.; Graham, T. H., Shale Products, Limited, Inglewood, Ont.

Haigh, L., Hadfield, Penfield Steel Co., Bucyrus, Ohio; Harrison, Chas., Dominion Sewer Pipe & Clay Ind., Ltd., Swansea, Ont.; Hastings, M. B., A. H. Winter-Joyner, Limited, Toronto, Ont.

Keith, Gordon, The Canadian Manufacturer, Toronto, Ont.; Kennedy, Thos., Dominion Sewer Pipe & Clay Ind., Ltd., Swansea, Ont.

Lewis, C. B., Toronto, Ont.; Longwell, Fred, Streetsville (Ont.) Brick Co.

McCannell, F., Milton (Ont.) Pressed Brick Co.; McCredie, M., Belmont, Ont.; McGolpin, Wm. C., National Fire Proofing Co., Toronto, Ont.; McGregor, D. G., McGregor & Gammage, Dresden, Ont.; Millar, Chas. A., Ontario Sewer Pipe & Clay Prod., Ltd., Mimico, Ont.; Morley, R. B., Industrial Accident Prevention Assoc., Toronto, Ont.; Morrison, J. H., Toronto, Ont.; Mulligan, T. M., Russell Shale Brick Co., Ottawa, Ont.; Mungan, John J., The Brown Instrument Co., Philadelphia, Pa.

New, Robert W., Hamilton (Ont.) Pressed Brick Co.; New, Ryland H., Hamilton & Toronto Sewer Pipe Co., Hamilton, Ont.

Oastler, R. C., Federal Engineering Co., Toronto, Ont.

Packham, W. J., Brampton (Ont.) Pressed Brick Co., Ltd.; Pears, James, Sr., James Pears & Son, Toronto, Ont.; Potts, William, Shale Products, Limited, Inglewood, Ont.; Price, Fred S., Price & Smith, Toronto, Ont.; Price, John R., Price & Cumming, Humber Bay, Ont.

Reed, H. M., B. E. Bechtel, Waterloo, Ont.; Rogers, W. R., Ontario Dept. of Mines, Toronto, Ont.

Scott, Geo. H., Shale Products, Limited, Inglewood, Ont.

Townsley, B. F., Industrial Appliance Co., Toronto, Ont.; Trotter, W. C., Standard Clay Products, Limited, St. Johns, P. Q.

Wallace, C. H., Clay Products Agency, Limited, Toronto, Ont.; Walsh, S. R. Goodyear Tire & Rubber Co., New Toronto, Ont.; Warwood, W. A., Toronto, Ont.; Whiston, R. A., E. M. Freese & Co., New York, N. Y.; Woods, W., Federal Engineering Co., Toronto, Ont.; Worcester, W. G., University of Sask., Saskatoon, Man.; Wright, J. C., Proton, Ont.

Late Arrivals

J. H. Bickle, Toronto (Ont.) Sewer Pipe Co., Ltd.; O. Baird, H. C. Baird Son Co., Park Hill; J. B. Carswell, Carswell Construction Co., Toronto,; Frank Crawford, Crawford Bros., Hamilton; A. U. Cote, Cooksville (Ont.) Shale Brick Co.; C. Chapman, Toronto; A. J. Dunsmore, Mussens, Ltd., Toronto; W. H. Freeborn, Ideal Brick Co., Brantford; J. R. Hozzans, McColl Bros., Toronto; W. A. Hinde, Georgetown, Ont.; E. C. Hanson, consulting engineer, Toronto; Thos. A. Hibbins, Stevenson Co., Wellsville, Ohio; F. G. Hayroe, Mathews Gravity Carrier Co., Ltd., Port Hope; E. H. Hawthorne, Don Valley Brick Works, Toronto; H. St. J. Jarvis, Don Valley Brick Works, Toronto; Ernest Jamieson, Toronto; John King, Dominion Sewer Pipe Co., Aldershot, Ont.; W. S. Kupfer, Canadian Dressler Tunnel Kilns, Cleveland; W. E. Loomis, Sherbrooke, Que.; F. H. Middleton, Don Valley Brick Works, Toronto; Mr. Morrison, International Business Machines, Toronto; P. A. Mechan, Canadian Dressler Tunnel Kilns, Cleveland; G. L. Memory, Elk Fire Brick Co. of Canada, Ltd., Hamilton; W. J. Nicholson, National Fireproofing Co., Toronto; K. F. Ollman, Ollman Bros., Hamilton; Geo. Piggott, Mount Dennis, Ont.; Geo. P. Price, John Price, Ltd., Toronto; T. A. Randall, Indianapolis, Ind.; J. F. Read, Hamilton & Toronto Sewer Pipe Co., Hamilton; S. R. Parsons, British American Oil Co., Toronto; W. A. Schorman, British American Oil Co., Toronto; Chas. Wagstaff, brick manufacturer, Lindsay, Ont.; T. H. Wallis, Dominion Sewer Pipe Co., Swansea, Ont.; J. H. Walker, Dominion Belting Co., Hamilton; J. E. Walsh, Manager Canadian Manufacturers' Association, Toronto.

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HARDWOOD LUMBER CASE DATA AVAILABLE

The Bank of America of New York City has recently published a booklet containing the case of the United States vs. the American Column & Lumber Co., et al., otherwise known as the "Hardwood Lumber Case." This information is extremely interesting, since it gives the full text of majority and dissenting opinions of the United States Supreme Court in the case of the American Column & Lumber Co. and the American Hardwood Manufacturers' Association, and comment on its implications to trade associations and to American business. Copies of this booklet may be had by writing to the Bank of America, 44 Wall Street, New York City.

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Hudson River Brick Supply Ample for Immediate Future—Frozen River Ties Up New York Deliveries

BUILDING CONSTRUCTION commodities are passing from a buyers' to a sellers' market, says the Dow Service daily building report of February 11, 1922.

The year's building movement has opened a month ahead of normal years. March 15 usually marks the opening of the construction season, in this city and vicinity, which is about the time Hudson river navigation to brick manufacturing centers is resumed. More actual building operations are being reported as going ahead in February than has been recorded in February of any recent year. Also there is less speculative building material purchasing, with the single exception of second-hand brick. Such a situation has only one logical outcome: a concentration of postponed orders at the very time when a gradual spread of increased volume would tend to keep prices steady.

Common Hudson river brick is quoted officially at wholesale at $17 a thousand. Staten Island brick and Raritan brick, with a dribble of Connecticut and New York state brick coming in by rail, are arriving in sufficient quantities to keep building operations moving. The Hudson river will probably remain closed until the middle of March, even under a spell of warm weather, but this will at the same time accentuate the demand for brick which Hudson river manufacturers say they will be amply able to supply.

Meantime stocks of brick in Staten Island and New Jersey are being fast reduced. This kind of brick is bringing around $16 a thousand, wholesale. Inter-dealer borrowing of brick in order to make delivery on jobs under contract was reported last week from five important dealers altho there were two barge loads at the West 52nd Street wholesale dock and 25 barge loads in various stages of unloading around the city.

Rail deliveries of brick, both face and common, are being delayed. On one road a charge of $5.60 is made for transporting brick by rail from Haverstraw, a distance of 35 miles while from a distance of 175 miles, from Troy to Mechanicsville, it charges $5.06. This condition is pointed out by brick buyers as contributing in some degree toward serious situations with regard to continuation of building projects pending resumption of navigation on the Hudson if present rate of building progress increases to any important degree.

Brick manufacturers, on the other hand, said at the week-end that they would be able to take care of all building projects between now and the resumption of brick production in the spring. They were strong in their assertions that they had plenty of brick to supply immediate needs at the West 52nd Street wholesale dock, Manhattan, at $17 a thousand, wholesale, and that there need be no postponement of building construction because of shortage of brick supply for the next two weeks at least. There is now about 150,000,000 brick ready for shipment as the ice clears which is probably sufficient for New York city requirements if they are no more acute than they now are.

Railroads Must Be Put on Sound Basis

Hoover Says Railoads Should Expand and Increase Efficiency—Rates Must Be Brought Down Thru Reduced Operating Cost

SECRETARY OF COMMERCE HOOVER, in a statement made recently to the Interstate Commerce Commission, outlined very clearly the troubles and immediate and future needs of the railroads, and the vital importance to the basic industries of the country of a quick return to a sound financial basis by the railroads.

Speaking of our own and the world's troubles and problems in general, Mr. Hoover said, "Even a superficial survey must bring us out of an atmosphere of gloomy introspection into an assuring realization that, great as our dislocation may seem to be, we relatively are in an enviable position. Our nation is unshaken, and as a people we are getting our bearings in a world of perplexing economic adjustments."

Transportation Facilities Inadequate

With regard to the present situation in the railroads of the country, Mr. Hoover stated that our transportation facilities are below the needs of our country, and that a quick resumption of construction was necessary to prevent a strangulation of the agricultural, commercial and industrial industries by insufficient transportation upon resumption of business activities. To keep pace with the growth of the country, an enormous amount of expansion annually in our transportation machine is necessary. We must add at least 120,000 cars and 2,500 locomotives to our equipment every year. Since we entered the war in 1917, we have constructed at least 10,000 miles of railways less than our increasing population and economic development called for, and we are behind in rolling stock by about 4,000 locomotives and 200,000 cars. A car shortage, Mr. Hoover said, upon resumption of business would mean a tremendous loss to the American people, amounting probably to a billion dollars.

Secretary Hoover brought out that in the last few years the public has lost confidence in railroads, and railroad securities, and as a result much capital was diverted from the railroads into other channels, making it impossible to finance railway expansion by the issuing of common and preferred stock, and these expansions could be financed only by bond issues.

Government Should Consider Giving Credit

"In these circumstances," Mr. Hoover said, "it seems to me vital that the railways as our greatest industry should propose a courageous program of broad visioned betterments, and if necessary the Government should consider giving the use of its superior credit. It would not cost the taxpaper a cent to give the Government guarantee to equipment trusts upon the primary responsibility of the railways' proceeds devoted entirely to improvement and equipment. This is no proposal to take money from the taxpayer. It is a proposal to save them from paying treble the amount of his guarantee in profiteering and losses. It will render a reduction of rates earlier, for unless something is done the improvements will have to be paid over years out of increased rates. Nor would we lose a cent upon the guarantee, for if American railways cannot earn interest on their borrowings, let us throw up our hands and prepare for a second Russia.

"We talk glibly of giving billions of credit to foreign countries to increase our farm exports. I wish to say with all responsibility for the statement that a billion dollars spent upon American railways will give more employment to our people, more advance to our industry, more assistance to our farmers, than twice that sum expended outside the frontiers of the United States—and it will be greater security for the investor."

Should Decrease Gap Between Producer and Consumer

Speaking of the relationship of price between primary producers and ultimate consumers of goods, Mr. Hoover said, "It is a certainty that in order to decrease the spread between producer and consumer, railroad rates must come down, and for rates to come down, costs of railway operation and wages and prices of supplies must be reduced. Until this adjustment is secured, the economic machine will continue to move slowly. We cannot and should not expect wages to come back to pre-war levels. Many of our wage scales were too low in pre-war times; they can follow down step by step with the cost of living, but there are permanent charges in this spread such as taxes which will hold the cost of living above pre-war level. We must gain our other reductions in the spread by increased national efficiency."

The Secretary of Commerce made some very pertinent remarks regarding the method of readjusting rates. Among other things he said, "The increases in railway rates during the past five years have fallen with extraordinary inequality on different commodities and different groups of people in the community. The country grew up, its industries were distributed under ratios of costs between different commodities, ratios between raw materials and finished goods, ratios between the farm and city; these have all been distorted by the horizontal rise. The increases in rates since 1914, for instance, have added probably less than one per cent. to the price of cotton goods on the average haul, but it has added probably 60 per cent. to the price of coal. The increased rates since 1914 have added nearly 100 per cent. to the cost of assembling the materials for pig iron.

Freight Rates More Vital Than Passenger

"If I were to discuss the rates charged today I should say at once that a decrease in passenger rates is not nearly so vital to the community as freight rates, for passenger rates do not enter into the spread in proportion to the relative volume of earnings. If I were examining the freight rates I should at once say that coal, metals, wood, and agricultural and other producers' goods should be reduced to the bottom before L C L and class rates are touched.

"I would be willing to go even farther and say that I am convinced that even if the Commission cannot at the present moment justifiably reduce railway incomes a single dollar, it is warranted in investigating the possibility of some relief to the more distressed commodities by a revision of some rates upward. There is perhaps no great field for changes in this direction but it is worth inquiry. As mentioned above, an economic analysis of our industry will show that L C L and class rates are far too low compared to the rates on primary commodities.

R. R. Earnings Very Low

"With the gradual return of the traffic to normal, with decreased operating costs, relief in rates will be available, and it would be an economic crime to apply such relief by horizontal reductions to all rates thus giving relief to higher priced goods and travel, when the vital mainspring of our economic life, our agriculture and fuel and metals, are choked."

Mr. Hoover said that a survey of the results of the past year reveals the fact that many railways have failed to earn interest upon their borrowed capital, whereas others have earned dividends on their share capital. A survey of the various districts shows that the whole of class one, southern roads, barely covered bond interest, while the most fortunate group, the western roads, show an earning of only four per cent. in 1921 upon their tentative valuation. "Review of this situation," Mr. Hoover said, "present earnings and their perilous closeness to bond obligations, seem to me to dispose of the question of immediate important rate relief, if we do not wish widespread receivership and shocks to our whole commercial fabric.

"I believe there are cases where earnings could be increased by lower rates. I know that it is contended that such opportunity does not exist, but no one can review the testimony given here during the past few weeks without concluding that the rates in special instances are stifling business. These reductions are perhaps not important in the whole problem of rates, but I am convinced that lower rates would recover lost traffic such as export coal, substitutions in building materials, gains in water competition, and so forth."

Mr. Hoover in speaking of the efficiency of our railways, stated that a comparison with foreign railways demonstrated that our own systems are of higher standards, better in methods than others, and are growing in efficiency. Mr. Hoover spoke against Government ownership, saying that no one with a week's observation of Government railways abroad, or with Government operation of industry in the United States, would contend that our railways could ever be operated as intelligently or as efficiently by the Government as thru the initiative of private individuals.

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TRY TO TAKE LARGE ORDERS FROM DEALERS

When the National Association of Builders' Exchanges meet at Memphis, Tenn., on February 20, action will be started to formulate an aggressive campaign to force certain material producers to sell direct to contractors in wholesale lots. It is claimed that retail dealers and local representatives of certain building material manufacturers insist that all products sold in their territory should be handled as local business, affording the retailer a margin on each sale. This increases the cost of construction and in some cases the dealers cannot be relied upon to furnish a continuous supply. The contractors state that today it is almost impossible for them to buy direct, even in carload lots.

The retailers argue that if they are to remain in business and serve the public at all times, they cannot be deprived of the larger orders. It is expected that this proposition will be threshed out at the coming meeting, enabling action to be taken which will force early readjustments.

* * *

CHROMITE IN THE U. S.

Field studies of deposits of chromium ore in the United States made by the United States Geological Survey have shown that this country has reserve deposits adequate to have supplied a war demand for four or five years and possibly longer. The World War largely increased the demand for chromite, and it was vigorously sought in the United States, where its production increased from 255 long tons in 1913 to 82,430 tons in 1918. After the armistice, however, the production soon decreased.

The principal deposits of chromite, the only commercial ore of chromium, are found in the Pacific Coast States, Montana, the Appalachian region of North Carolina, and southern Pennsylvania and northern Maryland.

Chromite invariably occurs in connection with basic igneous rocks—periditites or pyroxenes—composed partly or wholly of olivine, enstatite, or diallage. The ore bodies are generally irregular by lenticular or sheet-like in form and range in length from a foot to many hundreds of feet.

The ore may occur in irregular grains or well-defined crystals scattered thru the rock and grade in abundance from a mere sprinkling to compact ore that consists wholly of chromite. Much of the ore in the Klamath Mountains is granular and disseminated, altho some of it is banded and occurs in numerous but relatively small lens-shaped bodies, and in a few of these the chromite occurs in small concretions. In eastern Oregon some of the deposits resemble dikes, and in Montana extensive bands in large dikelike masses form the prevailing type.

The Wood mine in Lancaster County, Pa., contained the largest known single body of chromium ore. It mas 300 feet in length and 20 feet in average width and was mined to a depth of 720 feet, yielding about 100,000 tons of ore. The ore contained an average of 48 per cent. of chromic oxide, altho some of it contained as much as 56 per cent.

In Pennsylvania, Maryland, and North Carolina chromite occurs not only in rock form but also as chrome sand that has been concentrated from disintegrated rock by the action of surface streams. For a number of years this chrome sand has furnished a special grade of chromite, used in Europe to set the colors on fine porcelain ware.

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STANDARD FIRE BRICK SPECIFICATIONS

The Bureau of Standards is at work on a series of specifications for fire brick which when completed, will be used by the Federal Specification Board, and govern all purchases of fire brick made by the Navy Department and by the Panama Canal, as well as practically all other government purchases of this material. A conference was held at the Bureau of Standards at Washington, D. C., to which a number of well-known refractories manufacturers were invited as well as representatives of the larger users of refractories products. The Refractories Manufacturers' Association was represented by George A. Balz, Seaboard Refractories Co., Perth Amboy, N. J.; J. Spotts McDowell, Harbison-Walker Refractories Co., Pittsburgh, Pa.; A. F. Greaves-Walker, American Refractories Co., Pittsburgh; Dr. Raymond M. How, Senior Fellow of the Refractories Manufacturers' Fellowship, at Mellon Institute of Industrial Research, Pittsburgh. W. A. Hull, Chief of Refractories Section, Bureau of Standards, presided.

* * *

MAGNESITE IN PENNSYLVANIA

Demand for magnesite on the Atlantic seaboard resulted last summer in the investigation of the possibility of working Pennsylvania deposits profitably, according to a report by the United States Geological Survey. These investigations showed that magnesite occurs just east of Goat Hill in the southwestern part of Chester County, about two miles north of Rising Sun, Md. Magnesite deposits are also found in the State Line serpentine and all the old pits recently reopened are within a few rods north of the state boundary.

The investigation showed that the quantity of magnesite available close to the surface was very small, and many tons of waste would have to be handled to produce a single ton of ore. Production on a commercial scale was, therefore, not attempted. The magnesite is of the white, amorphous kind like that produced in California and Greece. It has the typical curved, porcelaneous fracture and is apparently of high grade.

LECTURES ON PAVING BRICK

A feature of the Road School recently held at Purdue (Ind.) University, was a slide lecture on the manufacture and use of paving brick, delivered by Will P. Blair, vice-president of the National Paving Brick Manufacturers' Association.

Every county road supervisor and surveyor in Indiana was present as well as many county commissioners.

Mr. Blair dealt chiefly on details of construction and the most efficient methods for using brick as a paving material.

MAY RAISE CANADIAN FIRE BRICK DUTY

According to Frederick W. Donahoe, secretary of the Refractories Manufacturers' Association, word has reached here that the effective date of the proposed Canadian Customs ruling, which prefer the marking of all goods imported into Canada, with the name of the country of origin, has been postponed. This will not seriously affect any Brick and Clay Record readers because practically all rough clay products were especially exempted from the ruling. Common building brick, face brick, hollow tile, fire brick and fire clay in sacks were among those exempted. There is a rumor, however, that the import duty on fire brick will be increased to 22½ per cent. and that this will apply to nine inch as well as shapes and all grades of nine inch. The Canadian Manufacturers' Association is putting up a big fight against this increase, claiming that it will in no way affect amount of fire brick shipped into Canada, but will merely assess a large body of manufacturers for the possible benefit of one or two very small producers in Nova Scotia and in British Columbia.

BEG YOUR PARDON

In recent issues of Brick and Clay Record, items have erroneously stated that W. G. Worcester, Professor of Ceramics at the University of Saskatchewan, Saskatoon, was formerly connected with the Alberta Clay Products Co. at Medicine Hat, Alberta. Mr. Worcester has asked us to make a correction of this item, and suggested that the mistake was undoubtedly due to the fact that he was formerly secretary and treasurer of the Alberta Clay Products Manufacturers' Association, and thus his connections have been confused.

Nebraska Brick & Tile Ass'n Meeting Draws 30 Manufacturers

APPROXIMATELY 30 clay products manufacturers attended the Seventh Annual Convention of the Nebraska Brick and Tile Association. The meeting was held in the Lincoln Hotel, Lincoln, Neb., on January 25 and 26. It proved to be very interesting, some valuable information being brought out by the speakers and by the clay products manufacturers.

Professor DeBaufre, of the mechanical engineering department of the University of Nebraska, was present at the meeting, and on being called upon to give his opinion as to the possibility of creating a ceramic department in connection with the engineering department in the University of Nebraska, stated that he felt the brick and tile industry of Nebraska had just as much right to expect assistance from the state university as do the dairy and poultry raisers. At the present time there exists both a dairy and poultry department in connection with the university, and Professor DeBaufre felt that if the brick manufacturers were sufficiently interested, they might prevail upon the powers that be to create a ceramic department.

As a result of discussions on this subject a committee was appointed to keep in touch with the activities of the department of engineering at the University of Nebraska, and to use their influence to have the department of ceramics developed in connection with the engineering department. The following are members of the committee: Chairman, O. R. Martin, Klose Brick & Tile Co., Lincoln; A. H. Farrens, Western Brick & Supply Co., and O. H. Zumwinkel.

Tell of Year's Experiences

It was suggested that the afternoon session, January 25, be given over to what was called an "experience meeting." Among the many interesting talks made at this session was one by Mr. Farrens, chairman of the advertising committee, who stated that he did not expect much revival of business generally in Nebraska until the farmer's dollar would purchase more than it does at the present time.

On the evening of January 25, the association held its annual banquet, at which H. Lloyd Hansen presided. Mr. Hansen introduced Thorne Browne, of the State Railway Commission, who spoke to the association on the question of freight rates. Following Mr. Browne's talk, Dr. George E. Condra, of the University of Nebraska, showed the members present some pictures taken by the Department of Conservation and Survey of the university, and explained how a brick and tile reel could be perfected.

At the morning session, January 26, a committee was appointed to cooperate with Dr. Condra in making a brick and tile film, showing that industry in Nebraska. This committee consists of Mr. Martin, Mr. Farrens and Mr. Zumwinkel.

Banker Addresses Meeting

Following the disposal of business matters, Chairman Hansen introduced M. Weil, of the National Bank of Commerce of Lincoln. Mr. Weil in the course of his talk emphasized the importance of our interest in legislation, and spoke of the work being done by the War Finance Corporation, mentioned the soldiers' bonus bill and other legislative matters in which all the business men of the country should be interested.

The nominating committee recommended the following officers, which were unanimously accepted by the association: President, H. Lloyd Hansen; vice-president, F. C. Burnham; secretary-treasurer, O. H. Zumwinkel. The following have been elected to serve on the executive committee: A. H. Farrens, B. Koehler, J. W. Turner, M. E. Fairchild, and O. R. Martin.

Following is a list of attendants:

Henry Mapes, Klose Brick & Tile Co., Aurora; Henry Ohlsen, Henry Ohlsen & Sons Co., David City; R. A. Smoot, Doniphan Brick Works, Doniphan; H. E. Fairchild, Fairchild Clay Products Co., Endicott; R. P. Fairchild, Fairchild Clay Products Co., Endicott; B. Koehler, Geneva Brick & Tile Co., Geneva; H. Lloyd Hansen, Polenske Bros.—Schellak & Co., Hastings; Hugo Polenske, Polenske Bros.—Schellak & Co., Hastings; Geo. B. Blackston, Western Brick & Supply Co., Hastings; C. B. Hutton, Western Brick & Supply Co., Hastings; M. Stein, Western Brick & Supply Co., Hastings; S. W. Scrannage, Western Brick & Supply Co., Holdredge; H. H. F. Waterman, Builders Brick Manufacturing Co., Hooper; Thorne Browne, State Railway Commission, Lincoln; C. F. Greenburg, Klose Brick & Tile Co., Lincoln; O. R. Martin, Klose Brick & Tile Co., Lincoln; D. G. Menke, Klose Brick & Tile Co., Lincoln; George R. Chatburn, University of Nebraska, Lincoln; George E. Condra, University of Nebraska, Lincoln; Wm. L. DeBaufre, University of Nebraska, Lincoln; C. M. Duff, University of Nebraska, Lincoln; Jiles W. Haney, University of Nebraska, Lincoln; Oscar W. Sjogren, College of Agriculture, U. of N., Lincoln; Seth C. H. Taylor, Conservation & Survey Div., U. of N., Lincoln; Joe D. Dallas, Western Brick & Supply Co., Lincoln; A. F. Crawford, Western Brick & Supply Co., Lincoln; A. H. Farrens, Western Brick & Supply Co., Lincoln; E. E. Kennedy, Western Brick & Supply Co., Lincoln; S. A. Kammerlohr, Yankee Hill Brick Co., Lincoln; R. F. Koelin, Yankee Hill Brick Manufacturing Co., Lincoln; Walter C. Lengerman, Yankee Hill Brick Manufacturing Co., Lincoln; W. Stein, Western Brick & Supply Co., Nebraska City; F. C. Burnham, York Brick & Tile Co., York.

Iowans Hold Greatest Meeting Since 1913

Iowa Clay Products Manufacturers Association Convention Featured by Excellent Talks and Discussions—Thresh Out Dealer Manufacturers Question—Over 50 Delegates Present

THE GREATEST MEETING since pre-war times was held by the Iowa Clay Products Association at Des Moines on Wednesday and Thursday, February 15 and 16. 52 men were registered on the first day and there were also present a great many dealers who were convening during the same days in their annual meeting. Of great interest was the discussion of dealer-manufacturer cooperation led by C. Y. Smith, prominent dealer of Ottumwa, and H. R. Straight, manufacturer of Adel, and the discussion on road drainage problems—especially as to drain tile deliveries.

Grover H. Galvin, the jovial president of the association, opened the meeting with a brief but splendid address. He said that one of the things Iowa manufacturers should have learned during the past year of industrial stagnation is the almost criminal negligence of failure to keep costs properly. The present demoralized price situation he attributed to ignorance of manufacturing costs.

Says Industry Is in Enviable Position

Mr. Galvin praised the work being done for the industry in various ways by the national clay products trade associations. He pointed out the great amount of deferred building which must eventually be done, and how this will bring back better business conditions in the industry. Because of this situation Mr. Galvin believed the industry to be in an enviable position.

In an afternoon session B. F. Kauffman, of Des Moines, addressed the delegates on the economical situation, and in his talk gave some plain, straight-from-the-shoulder facts that were of good common sense. He urged that people do more actual thinking for themselves instead of accepting the statements made by many on economic subjects.

As an example he stated that the $20,000,000 relief given farmers by the war finance corporation was discredited in various ways, and said to have been of no aid to the farmer but instead of direct advantage to Wall Street brokers. Mr. Kauffman pointed out the fallacy of this view and showed how the money was used by banks and enabled them to give farmers an extension of credit. Because of this farmers did not need to liquidate so soon and could hold their produce for a more favorable market, and the increase of grain prices is a direct result of this.

Less Restrictive Legislation Necessary

Less restrictive regulatory legislation is the crying need of the nation, said Mr. Kauffman. Whenever there is difficulty in any of our basic industries we immediately begin to pass legislation like administering medicine to a sick person, and the result has been we have become filled up on medicine until we are almost like dope fiends. He showed how present conditions such as the railroad situation was due to such measures.

John Thompson, The Homestead, Des Moines, told of the greatly increased purchasing power of the farmer, who, he said, was far from being broke despite the general opinion concerning his status. He pointed out that on February 10 the increase of the following commodities since their low point has been hogs, 50 per cent.; steers, 12 per cent.; lamb, 71 per cent.; sheep, 100 per cent.; corn, 20 per cent.; oats, 17 per cent.; eggs, 77 per cent.; cheese, 46 per cent.

With very few exceptions the Iowa farmers owe less than 15 per cent. on their farms, which is very comparable with other businesses. Mr. Thompson added that there was room for many more silos and the farmer should be educated to put his dry stocks in the silo—which practice is not very general now.

A splendid talk on salesmanship by Ralph Tuller, Reliance Brick Co., Des Moines, illustrated with cartoons, proved of unusual interest. He showed how in 1919-1920, $5,000,000,000 worth of blue sky stock was sold in Iowa. This was due to the splendid sales organization and methods used, and it should be possible to divert a great deal of this money to clay products.

Dealer-Manufacturer Discussion Interesting

Mr. Tuller urged the manufacturers to sit down with their salesmen and show them how to analyze their customers. Keep them posted on general progress—keep them inspired and enthused—and supply them constantly with fresh viewpoints. Moreover, the dealers should be taught more about the use of

The Pep and Enthusiasm Which Characterizes the Iowa Clay Man Was Present in Abundance at the clay products so that they can give intelligent service and hence sell more material.

The dealer-manufacturer cooperation discussion was of immense interest. Mr. Smith told how the dealer territory was becoming more restrictive and how it was becoming incumbent upon him to give greater service. It is essential that he add more products to his line and the lumber dealer was looking with favor now more than ever to the handling of clay products.

The need for a fair profit in handling clay products was felt, he said. At present prices and conditions the retailer cannot make money on clay products. The dealer needs 20 per cent. on his sales, he stated.

H. R. Straight stated that the necessary confidence between the dealer-manufacturer should be established and each should get proper protection. Bargaining by retailers must be eliminated. Mr. Straight admitted that a great deal of the lack of proper cooperation was due to the manufacturer himself.

E. R. Sturtevant Speaks to Meeting

Thursday morning, E. R. Sturtevant, secretary of the Hollow Building Tile Association, briefly addressed the delegates, pointing out some of the splendid points made by speakers of the previous day. Business conditions are regulated by natural economic laws, he said. Prices must bear somewhere near the same relationship to each other that they did before the war.

Mr. Sturtevant also mentioned the splendid activities carried on by the Hollow Building Tile Association, such as advertising, research and in trying to secure better freight rates. He also emphasized the need for more artisans to lay up the products of clay manufacturers.

Paul E. Cox, director of Ceramic Department, Iowa State College, Ames, read a very excellent paper, telling the possibilities of Iowa clays. These clays, if developed, could be utilized for the manufacture of whiteware products, cooking ware, floor and wall tile, art ware, terra cotta, and so forth, he stated.

The secondary fire clays would make an excellent paving brick, he believed.

So many very excellent points were brought out in his talk on fuel economy that D. A. Moulton's speech was of particular interest. He advocated purchasing coal on the heat unit basis, and told how one plant paid more per ton for its coal, but reduced the burning time and otherwise effected savings which more than made up for the increased price.

Should Find Proper Size for Kilns

There is a need for finding out the proper size of periodic kilns. There can be found a certain size above and below which the economy of operation is less.

The need for cleaning flues is important to secure best results. Bag wall heights should be watched. A high bag wall is not productive of economy. The lower bag is best for burning, the only objection being the flashing of the ware, but where this is not very important the low bag wall should be used. These and many other good points were brought out in Mr. Moulton's talk.

R. W. Crum, of the Iowa State Highway Commission, told of the great amount of tile used in road drainage. 5,416,528 linear feet of drain tile were used for road drainage last year, which is considerably more than is used in other states. His talk aroused considerable interest in manner of delivering tile. The manufacturers claimed that there was a great waste going on because of the necessity of quoting and delivering tile to the line of the ditch. After a lengthy discussion on the evils of this system and the undesirability of road drainage business, a committee was appointed consisting of C. B. Platt, chairman, H. R. Straight, Adel and J. D. Cook, Mason City, to confer with the highway officials and devise better methods of delivering drain tile.

New Officers Elected

H. A. Jung, of the National Clay Products Industries Association, talked on the subject of labor, and suggested the joining of the N. C. P. I. A. for self-preservation.

A talk on cost accounting and resolutions calling for the passage of the deep waterways project, railroad relief, and suggesting the appointment of a fellow clayworker, C. A. Rawson, to fill the vacancy in Congress, were the final features of the program.

The officers for next year were chosen as follows: President, H. L. Tramp, Creston Brick & Tile Co.; vice-president, J. O. Reaver, Iowa Pipe & Tile Co.; treasurer, H. R. Straight, Adel, and secretary, C. B. Platt.

Among social features was a very enjoyable dance on Wednesday evening, which was well attended by members and ladies, and a luncheon for the ladies as guests of the Main Belting Co., Brown Instrument Co., Globe Machinery Co., Imperial Belting Co., and Brick and Clay Record. Mrs. W. Brecht, of Des Moines, acted as hostess.

Among Those Present

M. I. Cain, Kalina (Ia.) Clay Co.; E. W. Dailey, North Iowa Brick & Tile Co., Mason City; W. L. Jackson, Buckeye Clay Products Co., Belle Plain; G. H. Galvin, Rockford (Ia.) Brick & Tile Co.; J. F. Chambers, Fate-Root-Heath Co., Plymouth, Ohio; C. G. Kaiser, Dysart; Julius Schultz, Dysart; F. J. Kock, Audubon (Ia.) Brick & Tile Works; C. S. Sherman, Main Belting Co.; M J. Welsh, Imperial Belting Co.; S. A. Martin, Centerville (Ia.) Brick Co.; S. J. Galvin, Hampton (Ia.) Brick & Tile Co.; A. W. Wolf, Hampton (Ia.) Brick & Tile Co.; R. E. Neiswanger, Standard Clay Products Co., Harvey; S. H. Dunn, Fairfield (Ia.) Brick & Tile Co.; J. O. Reaver, Iowa Pipe & Tile Co., Des Moines; O. J. Whittemore, contractor and engineer, Sheffield; Claude Smith, contractor and engineer, Smith Brick & Tile Co., Sheffield;

Annual Convention. Above is a Panoramic Picture of Practically the Entire Convention Group.

C. L. Smith, Smith Brick & Tile Co., Sheffield; H. R. Straight, Adel (Ia.) Clay Products Co.; L. C. Hulse, Platt Co., Van Meter; M. T. Straight, Adel (Ia.) Clay Products Co.; Earl A. Bickel Adel (Ia.) Clay Products Co.; L. E. McCoskee, De Soto (Ia.) Brick & Tile Co.; Ray M. McHose, Nevada (Ia.) Brick & Tile Co.; Tom W. Green, T. W. Green Brick Co., Sioux City; C. A. Reaver, Eldora (Ia.) Pipe & Tile Co.; F. F. Carhart, Sheffield (Ia.) Brick & Tile Co.; H. L. Buxton, Globe M. & S. Co., Des Moines; E. R. Sturtevant, Hollow Building Tile Ass'n, Chicago; H. A. Jung, National Clay Products Industries Ass'n, Chicago; Daniel Goodwin, Goodwin Tile & Brick Co., Des Moines; H. S. Vincent, Vincent Clay Products Co., Fort Dodge; H. I. Moore. Hawkeye Clay Works, Fort Dodge; I. F. Nelson, Central Clay Co., Des Moines; Geo. Schum, Kalo B. & T. Co., Fort Dodge; S. C. Johnson, Kalo B. & T. Co., Fort Dodge; C. C. McDermott, Brown Instrument Co., Chicago; J. G. Parks, Morey Clay Products Co., Ottumwa; H. L. Tramp, Creston (Ia.) Brick & Tile Co.; C. J. Brecht, Boone (Ia.) Brick & Tile Co.; Ralph W. Tuller, Reliance Brick Co., Des Moines; W. A. Queale, Redfield (Ia.) Brick & Tile Works; E. R. McKissup, Carlisle (Ia.) Clay Products Co.; Edw. Emmert, A. P. Green Fire Brick Co., Des Moines; J. P. Love, Boone (Ia.) Brick & Tile Co.; Paul Galvin, Rockford (Ia.) Brick & Tile Co.; Peter Wood, Sheffield (Ia.) Brick & Tile Co.; Geo. M. Tolbert, Des Moines (Ia.) Brick & Tile Co.; J. D. Cook, Mason City (Ia.) Brick & Tile Co.; E. E. Morgan, Knoxville (Ia.) Clay Products Co.; M. Fausler, Sheffield (Ia.) Brick & Tile Co.; T. J. Neiswanger, Standard Clay Products Co., Oskaloosa; R. E. Cullen, Hadfield-Penfield Steel Co.; L. Haigh, Hadfield-Penfield Steel Co.; E. P. Bradshaw, Bradshaw Tile Co., Fort Dodge; C. E. Carpenter, Adel; A. J. Thomson, National Clay Works, Mason City; John H. Turner, Sheffield; Geo. M. Stauffer, Gladbrook (Ia.) Pressed Brick & Tile Co.; A. W. Stauffer, Gladbrook Pressed Brick & Tile Co.

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ONTARIO DRAINAGE ASSOCIATION MEETS

The Ontario Farm Drainage Association held its annual convention in the Chamber of Commerce, at Chatham, Ont., on January 30, 31, and February 1.

A summary of the three day convention shows that several interesting topics were before the meeting and a number of instructive addresses listened to.

C. S. Parker of London, Ont., chairman of the Fuel Committee of the Western Ontario Clayworkers' Association gave an outline of the objects and purposes of the United Farm Drainage Co. He pointed out the advantages of central organization and the elimination of overhead expenses. A. Hicks, M.P.P., promised every assistance in his official capacity to further the interests of underdrainage in the province.

W. G. McGeorge, county engineer, gave an instructive address on the care and adjustment of surveying instruments. J. C. Stewart, barrister, explained the Municipal Drainage Act, the Ditch and Watercourse Act and the Tile, Stone and Timber Act.

J. D. Landis, Dayton, Ohio, official organizer for the National Brotherhood of Threshermen gave a talk on organization. Mr. Landis was at the banquet held on Tuesday evening, January 31, and in his opening address further pointed out the educational value of organization and the necessity of associations.

F. L. Ferguson, B.S.A., Dept. of Drainage, O.A.C., Guelph, Ont., gave a particularly interesting paper on "Ceramic Engineering," bringing out the pertinent points in its relation to the work under consideration. V. C. Lowell, B.S.A., Dept. of Drainage, Chatham, Ont., gave an address on "Drainage of Different Types of Soil." A paper on "Care and Operation of Ditching Machines" was also given during the session by R. W. Kneister of Comber, Ont.

Election of officers resulted as follows: Eberts, Ont., president; J. E. Jackson, M. R. Parrish and R. Kanister, vice-presidents; F. L. Ferguson, secretary treasurer; W. G. Walsh, Sarnia, Ont., chairman of committees.

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SILICA BRICK MAKING IN NOVA SCOTIA

A. W. McMaster, in the Journal of Engineer Institute of Canada, gives interesting information on the manufacture of silica brick in Nova Scotia. The following item reprinted from the "Industrial Digest," is an excerpt from the article:

Development of a new industry in Nova Scotia required first experimental work in connection with the manufacture of silica brick. Three properties of suitable quartzite for refractory purposes: mechanical strength, melting point, behavior on burning—first consideration. To produce a physically strong brick the stone must be hard and dense and give splintery, angular fragments of heterogenous size on crushing. Silica content may vary from 96 to 98 per cent., if less silica is present the fusion point is lowered. The use of pure quartzite of 99 per cent. SiO_2 has not been successful. Presence of alumina or ferric oxide is necessary to form a bond. Their combined percentage is usually 1.75 per cent. and should not exceed 2.5 per cent. The amount of alkalies should be less than .5 per cent.

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IOWA CLAY PRODUCTS MAN MADE SENATOR

The state of Iowa has chosen a man who has been working with the problems—and they are difficult ones, every clay manufacturer will admit—of transforming clay into useful products, for its representative in Congress. His training befits him unusually well to handle the difficult problems of national government.

Charles A. Rawson, of Des Moines, who was chairman of the Republican State Central Committee, was appointed by Governor S. E. Kendall to succeed William S. Kenyon as senator from Iowa. Mr. Rawson, it is understood, will serve only until a successor is elected at the general election in November.

Mr. Rawson's business, besides politics, is the manufacture of brick, tile and sewer pipe and other clay products. He is president of the Iowa Pipe & Tile Co., of Des Moines; the Eldora Pipe & Tile Co.; vice-president of the Des Moines Brick & Tile Co.; a director of the Teator Manufacturing Co.; director of the Des Moines National Bank, and serves as director of half a dozen insurance and trust companies.

He is a graduate of Grinnell College, and was named chairman of the State Central Committee in 1912, and has served constantly since.

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OLD ENGLISH CONCERN CLOSES DOORS

George T. George & Co. of St. Jude's, Bristol, England, have decided to close down their sewer pipe plant because of the small demand for this product. This company has made clay pipe for many years, and three generations of the George family saw the kiln lighted for the last time. Up to 20 years ago the firm had a big South African trade, the pipes being used by European traders to barter with natives for their ivory, gold and other treasures.

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SHORTAGE OF TRADE APPRENTICES

The situation regarding apprentices in the various crafts connected with the building industry is more or less serious. In the 947 locals, including some 90,000 mechanics, there are only 1,800 bricklaying apprentices. The masonic trades are particularly short of apprentices, and labor leaders have urged that contractors and trades should cooperate with local boards of education to make it attractive for young men to take up these trades. This shortage also makes for higher wages, and it has been reported in New York in some cases that plasterers are getting as high as $18 per day.

Some of the trades are recognizing the seriousness of the apprentice situation and are making provision to attract more young men to their industry. The Associated Tile Manufacturers made a special issue of "Tilecraft" (November) on a survey of apprentices in tile setting. They are urging dealers and local contractors to cooperate in solving the problem.

Legal Activities of Trade Associations

Secretary of Commerce Hoover and Attorney-General Daugherty Give Opinion on Legal Practices of Associations —Clear Atmosphere Regarding Sherman Anti-Trust Act

AGITATION in some of the larger cities of the country against trade associations in general has caused serious discussion by legal minds anent the validity of trade association activities. Even associations organized for strictly legitimate purposes, with no intentions of fixing the prices of their commodities or any other illegal activity, have been seriously concerned regarding the legality of their general actitvities.

In view of this situation, a series of letter which recently passed between Secretary of Commerce Hoover and Attorney-General Daugherty regarding the legality of trade association practices is of vital interest. Altho these letters are an informal expression of opinion, much significance is nevertheless attached to them. The first of these, written on February 3 by Secretary Hoover, is as follows:

"It may not be out of place to call your attention to the organic act which created the Department of Commerce, which imposed upon the Department the duty "to foster, promote, and develop the foreign and domestic commerce, the mining, manufacturing, shipping, and fishery industries, and the transportation facilities of the United States." In obeying the commands of the statute, it seemed to me that the Department should employ all available legal means to get into the closest possible touch with industry in all its forms and secure the best information possible regarding the needs and necessities of trade and commerce. If the Department has to help, aid, and assist industry, it must, of course, be conversant with the facts and conditions influencing the carrying on of trade. The existence of a large number of trade associations being well known prompted me to make inquiry regarding their forms of organization and the functions they were performing to ascertain whether or not they could be utilized as a means for securing trade information that would properly aid the Department in performing its duties. My inquiry into the affairs of trade associations was not with the idea of creating a new scheme for carrying on business, but solely for the purpose of ascertaining whether or not they could properly be utilized in furnishing information that would not only be helpful to the Department and to the commercial world but to the public generally, always keeping in mind that whatever activities were carried on by such associations, they should of necessity be within the terms of existing law.

Questionable Association Activities

"In the course of my inquiry, I discovered that certain trade associations were involved in litigation which questioned the legality of their performances, and, by reason of the litigation, there was much doubt and confusion regarding the legal limits within which trade associations could properly operate. This situation seemed to call for conferences with your Department, which you have graciously afforded, and altho no definite determination has heretofore been reached regarding the policy to be pursued, I realize the difficulties that confront you in attempting to reach a proper conclusion, and while a public announcement from you would have been most helpful to all, I most heartily acquiesce in your suggestion that the matter be presented as an informal, interdepartmental inquiry for my guidance in performing the duties imposed upon me by the organic act creating this Department.

"So much has been said in the various conferences, coupled with lapse of time, in order to obviate excusable failures in memory as to the matters that have heretofore been discussed and to make clear the position and views of the Department, I desire to offer some preliminary observations regarding trade associations before asking the specific questions heretofore set forth in various informal memoranda and upon which I desire the informal expression of your views.

Commercial Progress Measured by Advance in Knowledge

"Commercial progress in industry has always been measured by the advance in knowledge of those engaged in industry. It is impossible for men to acquire or secure all possible knowledge at one time. Its acquisition is a growth resulting from continuous, intelligent inquiry. The knowledge of an industry that is necessary and essential to its success must embrace all facts and circumstances that will in any way influence that industry. These facts and circumstances must include economic conditions as well as scientific facts to the extent that science is called into play in its operation and all commercial conditions that make for efficient production, merchandising, and distribution. No one will dispute the foregoing statements; they are fundamental and necessary to the life of trade and commerce.

"The difficulty seems to lie in the determination of the means and methods that may be adopted to secure this necessary information. Little, if any, trouble is experienced in securing the admission that an individual may secure knowledge of these facts by any means that would not constitute an individual crime, and that he may use the information in such manner as his best judgment may tell him will bring him the greatest benefit.

Cooperative Work Always Questioned

"But when two individuals engaged in the same line of industry undertake to provide a means for securing facts necessary and essential to the economic and efficient conduct of their respective organizations, this form of endeavor seems to at once assume an aspect of difficulty that, in my judgment, is in no way justified by a proper consideration of the underlying necessities therefor.

"The individual sets up some form of instrumentality to secure the information without which, in the management of his business, he would be groping in the dark. His competitor across the street does the same thing, and each, securing his information in his own way, uses it as he sees fit, and the action of either one has not offended the majesty of the law. Yet, if the two seek to join the instrumentality each has used for information purposes and the same information is received thru one instrumentality and the information given to each and it is used in the same way that it was before, it is suggested that the collective activity in the use of the consolidated instrumentality should not be permitted because of the greater ease and facility thereby afforded for the two individuals to make improper use of the information so acquired. In other words, the objection does not go to the instrumentality, but to the abuse of the information that may be secured thru the collective means.

Legislation Does Not Prevent Crimes

"The principle is the same whether two or 200 join together in securing the information.

"No form of legislation has ever yet been devised, nor has man, with all his genius for invention, ever been able to devise a rule or regulation that would prevent men from committing crimes if they are so minded. The best that can be done is to forbid the doing of certain acts or to command the doing of others, prescribing proper punishment in the case of the commission on the one hand and the omission on the other; and when legislation takes that form, rules and regulations and administrative constructions which have for their objective the making of the prohibited thing more difficult will always include within their terms the law-abiding citizen as well as the prospective criminal.

"We have had criminals since the beginning of time, and human nature cannot be changed by legislation. The criminally inclined represent a small minority, and it may be said in a general way that, excepting offenses against persons and property, most of the criminal statutes regulating trade and commerce and forbidding acts that seem against sound public policy have been made necessary for the control of the minority. None of these statutes, however, has undertaken to prevent the doing of a thing that would result in benefit to the public, but the restriction has been against the doing of the thing in an unlawful way. These statutes have not condemned lawful institutions or instrumentalities for the carrying on of commerce merely because someone might possibly abuse their use. The laws have condemned the abuse, and punishments have been prescribed for those who may be found guilty of the abuse.

Trade Associations Existing Many Years

Therefore, the fact that the minority may be known to violate given laws does not establish a principle that the primary means, lawful in itself, which they have adopted for the purpose of performing the unlawful acts, should be entirely abolished and its use forbidden by law-abiding citizens. Each unlawful use of the means is merely an individual case of the violation of a law.

"Trade associations have been in existence for many years. The great majority are legitimate, both in form of organization and in activity. The minority, while lawfully organized under articles expressing lawful purposes, may engage in activities that are evidence of purpose contrary to and outside of the declared purposes in the articles of organization.

"Again, a trade association may have lawful form of organization and the activities of its officers may be clearly within the purposes declared in the association charter, and yet members of the organization may, by unlawful confederation, use the information lawfully secured for unlawful purposes. It may, therefore, truthfully be said the line dividing the good association and the bad, the proper activity from the improper one, and the lawful activities of the officers of an association from the unlawful acts of the membership, cannot be determined, in every instance, with singular ease. It is my belief, however, that it is more easy to determine the forms of organizations and activities that are generally recognized as good than to determine in advance those that may be bad, because, in the latter instance, the peculiar facts relating to each association the subject of inquiry may determine whether the organization or its members are operating in violation of law.

Favors Trade Associations

"It is with much earnestness that I claim there is propriety, generally speaking, in trade associations. Their lawful field of endeavor is large, and their activities work for promotion and advancement of the public welfare and for progressive economic organization. In making this statement, I am not unmindful of the fact that the impression exists with a small minority that individual prohibited acts may be accomplished by organization under the disguise of a trade association. However, to make my position clear regarding the trade associations the existence of which I advocate, I desire to say that I have always taken the view that no body of men could combine in the form of a trade organization and do any act or thing forbidden by law if they were undertaken by them outside of a trade organization. The character of trade organization, the existence of which should be preserved is one that carries lawful purposes only in its articles of association; its activities must be in harmony with its declared purposes. The articles of association, with their lawful, declared purposes, must not be used as a mask to hide unlawful purposes. In other words, the organization cannot be used to conceal or disguise any contract, combination, conspiracy, agreement, or understanding, secret or otherwise, on the part of the officers of the organization or on the part of the membership or any part thereof to engage in activities in restraint of trade or otherwise in violation of the anti-trust laws.

Much Valuable Information Collected

"There has been much information collected by legitimate trade associations in which the general public has no interest whatsoever, yet information of this class has always been freely offered to the daily and trade press, as well as to any governmental agency that might desire the information as a matter of statistical record. On the other hand, certain statistical data are collected by trade organizations that would be of vast value to the public generally if published in practical, available form.

"Many of the trade associations securing and disseminating the statistical data mentioned have restricted the same to its membership, while others have undertaken to give the same to the public thru the daily and the trade press concurrently with its members. The trade associations of the latter class are in the minority.

Public Should Be Given Information

"Information lawfully secured regarding trade and economic conditions made public for the information of every one cannot be harmful. Information secured solely for the benefit of members and of a character that puts the membership, by reason of the information, in a position of advantage as compared with the public without such information cannot be sanctioned by sound public policy. The act of securing the information and the use of it by the members of a particular organization may be perfectly lawful in itself, but it is my belief that good morals and a sense of fair dealing require the giving of the information secured in this collective manner to the public generally, to the end that all persons engaged in commercial transactions involving the information in question will be on an even footing.

Policy of Price Distribution Criticized

"The activities of trade associations that have received the greatest criticism involve the collection of statistics relating to volume of production, capacity to produce by districts of production, wages, consumption of products in domestic and foreign trade, distribution thereof including volume of distribution by districts, together with figures as to stocks on hand, wholesale and retail, by districts, coupled with information as to price, either in the form of individual reports of each member distributed to every other member or the individual prices reported to the association and by the latter compiled and averaged by districts for certain specified periods.

"If information regarding production, capacity, and distribution by districts, with average prices for grades, brands, sizes, styles, or qualities sold in the respective districts for specified periods of time could be given to the public at the same time that such information is available to the members of an association, in my judgment, great public good would result. With this information available, everyone dealing in the products of a given industry, whether buyer or seller, would have the same information regarding conditions and, in dealing with one another, would have knowledge of the same facts upon which to form their judgments as to the proper course to pursue.

Publication of Information

"A majority of the associations collecting data of the nature indicated have distributed same only to members of the association, while others have undertaken to give the information to the public thru the daily and trade papers. Publications of the information by these associations in the daily press has not been general, and its availability to the public has been largely thru the medium of trade papers, and thru the daily press to the extent that the latter may have been utilized. When published thru trade papers this information should be released to members only after such publication.

"It should be borne in mind that the criticism aimed at this form of activity has not involved the instrumentality for securing it or the subject matter of the information, but has been directed to the use or possible use that might be made of the information and the fact that no means existed for distributing the information to the public at the same time that it was received by the members of the association. These observations likewise apply to the criticisms directed to the furnishing of average price of given commodities according to grade, size, brand, or quality by districts for specified periods of time, based on past and closed transactions.

Asks Daugherty's Opinion

"With these observations, which have been extended at greater length than I intended, I desire the informal expression of your views as to the following activities on the part of trade associations and their members wherein neither the form of the association nor the activity, which appear perfectly fair and lawful on the surface, is used to hide or conceal some contract, combination, conspiracy, agreement, or understanding, secret or otherwise, on the part of the association, the membership, or any part thereof to actually restrain trade or otherwise violate the Sherman Act."

The letter goes on asking Attorney-General Daugherty's opinion on the following trade association activities:

A uniform system of cost accounting.

Uniformity in the use of trade phrases and trade names.

Standardization of quality and grades of product of members.

Collecting of credit information.

Handling insurance of its members.

Cooperative advertising, and "may the association engage in such form of promotion by furnishing trade labels, designs and trade marks for the use of its individual members?"

Welfare work in the plants or organizations of members.

Handling of legislative questions.

Collecting of statistics showing volume of production, capacity produced, wages paid and consumption of product of each member.

Reporting of prices.

To this letter of Secretary Hoover, Attorney-General Daugherty replied as follows:

No Objection to Uniform Cost System

"There is no apparent objection to a standard system of cost accounting, but I think associations should be warned to guard against uniform cost as to any item of expense. For illustration, a strong effort has been made by some lumber associations to take as a basis for estimating costs of production a uniform charge for stumpage. Of course the cost of the timber in the tree to the different manufacturers who own their timber in the woods greatly varies; and as to each it should be charged at its actual cost. It is as clearly a violation of the law to agree upon the cost of an item that constitutes a substantial part of the total cost price when its cost actually varies, as to agree upon the sales price, because the sales price is substantially affected by such agreement. It has been ascertained that the members of one association go so far as to fix a uniform cost price, leaving to each member to determine what per cent. profit he will add, thus eliminating entirely competition in so far as affected by the cost of production.

Cooperative Advertising O. K.

"I can see no objection to cooperative advertising designed to extend the markets of the particular article produced or handled by the members of an association, but when the several producers or dealers use uniform trade labels, designs and trademarks it seems to me the inevitable result would be a uniformity of price. Where two competing articles are advertised in precisely the same way and bear exactly the same label or trade-mark, it certainly would be difficult for one to be sold at a higher price than the other, altho its quality may be superior. In a way this is illustrated in the cement industry. There a standard of quality has been adopted. That is, it is necessary for all cement to comply with a certain standard, but in practice no manufacturer undertakes to make, or at least no one advertises that he does make, a grade of cement superior to that standard. The result is that there is no competition in the sale of cement so far as quality is concerned. It seems to me therefore that it would be well to eliminate the latter clause in that question, to wit, "and may the association engage in such form of promotion by furnishing trade labels, designs and trade-marks for the use of its individual members?"

Activities Are Legal If Illegal Results Are Not Obtained

"I can now see nothing illegal in the exercise of the other activities mentioned, *provided always* that whatever is done is not used as a scheme or device to curtail production or enhance prices, and does not have the effect of suppressing competition. It is impossible to determine in advance just what the effect of a plan when put into actual operation may be. This is especially true with reference to trade associations, whose members are vitally interested in advancing or, as they term it, stabilizing prices, and who thru the medium of the associations are brought into personal contact with each other. Therefore the expression of the view that the things enumerated by you, with the exceptions stated, may be done lawfully is only tentative; and if in the actual practice of any of them it shall develop that competition is suppressed or prices are materially enhanced, this department must treat such a practice as it treats any other one which is violative of the Anti-Trust Act."

In reply to this letter Secretary Hoover has the following to say:

Use of Trade-marks

"Your observations regarding the last clause in the question pertaining to cooperative advertising in my letter are wholly sound, based on the language of that clause. It was not, however, my idea that each constituent member of a trade association would use a community trade-mark on his product, i. e., the same trade-mark that was used by every other member of the association. The question really relates to trade promotion thru cooperative advertising, in which certain trade slogans are used, such as, "Made in Grand Rapids," which was adopted by the furniture manufacturers at that furniture center. Generally, activities covered in that question are conducted by a trade association in a given local community. An organization at Chicago advertises for its entire membership, which includes every line of commercial endeavor in Chicago, that the city is the great central market. It is cooperative advertising of this class that tends to promote trade extension in given lines or collected lines of industry. Certain of the trade associations, however, do devise trade-marks, not for use by all members, but for individual members. . . .

"The activities of a trade association regarding trade-marks to which I referred in my letter of February 3 relate to the straightening out of instances of unfair competition or infringement as between the members by undertaking to design trademarks for the individual members of the association making the same product that would absolutely prevent confusion on the part of the public as to the producer or manufacturer of the given article and, at the same time, remove all claim of infringement or unfair competition. In other words, the trademark activity referred to was that of making the trade-marks of each individual member distinctive instead of common. You may, therefore, consider the part of my question referred to in your letter as eliminated from the question, and that the question was really intended to cover the matters stated herein."

⁂

N. A. C. A. YEAR BOOK READY

The 1921 Year Book of the National Association of Cost Accountants has been published and is now ready for distribution. This Year Book is a valuable contribution to cost literature, and is very interesting. It can be had by writing to the office of the association at 130 West 42nd St., New York City.

⁂

COLLECTING ACCIDENT PREVENTION DATA

The National Safety Council, 168 North Michigan Avenue, Chicago, is now engaged in taking a census to ascertain how many persons are engaged in preventing accidents and promoting good health in the engineering and contracting and the building supplies fields. Every reader who is professionally engaged in industrial or public accident prevention or industrial health work, whether or not he is devoting all or only part of his time to accident prevention, is urged to send his name and data covering his work to the Council's office at 168 North Michigan Avenue, Chicago.

⁂

CASH PRIZES FOR ARCHITECTS

As an indication of the alertness of face brick manufacturers in creating interest in their product and, at the same time stimulating business, one concern has announced a contest for architects and draftsmen with a total cash award of $1,000.

The idea is a novel one, and, as F. A. Hoiles of the Alliance (Ohio) Brick Co. states, should result in securing some of the most unique and artistic designs for mantels ever produced.

The very best designs of the hundreds that will be submitted, will be assembled and printed in colors as a catalog. There will be thirty-six prizes awarded, the first prize being $200 in cash, followed by thirty-five others of varying sums.

Three national architectural publications will carry full page advertisements announcing the contest.

That the contest will stimulate the interest in brick mantels goes without saying. It will be the means of increasing sales considerably. The contest closes April 1 and the winners will be announced as soon as possible afterward.

⁂

SOLVING THE BUILDING PROBLEM

How a Middle Western city solved the problem of starting up building operations offers interesting suggestions which may be applied to the situation in other parts of the country. The great difficulty in an attempt of this kind is in getting together the bankers, material men, builders, transportation men and labor and getting them to agree to work together for the common good. Here is the way a municipal goverment official of exceptional ability in the large Middle Western city accomplished it.

He started out by preparing a table showing the comparative prices of everything entering into the costs of construction work, covering the years from 1913 to 1921. Next he secured a list of important projects which were only waiting for lower prices to be under way, and after securing pledges in writing for work amounting to $15,000,000, he went to the material men and got their figures on what they could do in the matter of prices over a set period of six months.

The labor leaders were next to be interviewed. A cut of 20 per cent. in the wages of building labor was suggested and refused. The labor leaders said they would agree to a cut of 7½ per cent., but no more. Not satisfied with this, the energetic gentleman journeyed to Washington to confer with officials of the American Federation of Labor, who promised their cooperation in effecting the desired agreement. The case has now been prepared in simple form, and labor itself will be asked to vote "yes" or "no" on the question of accepting a 20 per cent. wage reduction.

⁂

ENGLAND ABANDONS HOUSING SCHEME

Word has reached here that the English government has definitely abandoned the project of financing the erection of 500,000 homes in England for workingmen. While thus far 70,000 have been built, it has been found that they cost so much more than was expected, that to complete the operation as the law provides for, would almost mean bankruptcy. Houses that before the war cost 250 pounds to build, now cost 1,000 pounds. Hence to pay for them on monthly installment would be more than the average English artisan could bear. It is estimated to complete the scheme that was provided for by the housing law that was enacted during the war, that it would probably mean to the government a loss of $100,000,000 a year for 50 years or more, that sum representing the difference of money invested at six per cent., and the low rents that were to have been charged, with taxation as the only way of meeting the deficit. Builders in the United States, it is claimed, assert that in view of John Bull's experience, Uncle Sam is wise to have kept out of the house building game.

⁂

SHORT COURSE IN HIGHWAY ENGINEERING

The ninth annual Short Course in Highway Engineering, under the direction of the Department of Civil Engineering, University of Illinois, will be held at the University on February 20-24 inclusive. The course promises to be highly interesting, and the very best talent obtainable is being secured so that the various topics will be handled authoritatively. The Division of Highways of the Illinois Department of Public Works is actively cooperating in the work of the Short Course, and many of the engineers will be in attendance.

Copies of the program and other information can be secured by addressing Professor C. C. Wiley, 200 Highway Laboratory, Urbana, Ill.

⁂

USE MUCH LABOR TO MAKE BRICK

A recently received item states that in the leading brick plant in Russia the actual working hours put in by employes during July was 110,000 and the output 201,000 brick. By September, with little increase in the number of employes, the number of hours had increased to almost 211,000 and the output to 604,000 brick.

Cashing in on National Advertising

Local Campaign, Supplementing National, Proves Extremely Profitable to Decatur Brick Co.—Use Local Papers, Billboards and Movies to Advertise

By C. F. Mattes

Sales Manager, Decatur (Ill.) Brick Co.

THE SLOGAN "The biggest little city on earth" characterizing Decatur Ill., has become familiar to people of the Middle West the last few years. And justly so, for Decatur is some town. But that is another story, and not relevant to the plot around which I have been asked to build this article. Except that being in the brick business in Decatur, and not in the lumber business, we have felt that if our fair city really is to live up to this reputation it is necessary that her basic form of construction be of a permanent nature, rather than a construction which at best in order to prevent absolute decay must be covered, and covered, and recovered, until he who administers the coverings noticing large blisters, peeling, and so forth, states that it will be necessary to burn off the accumulation with a blow torch and start over again.

So therefore I say, with the hope that our city may ultimately be a striking example of permanent construction, our company has for several years engaged in more or less local brick advertising, prior to the time when the American Face Brick Association undertook to enlighten the builders of this country regarding "construction de luxe." Since the advent of the national publicity campaign we have felt more strongly than ever the justification and importance of following up this advertising, directing our attention particularly to localizing the national advertising.

Public Is Reading National Advertising

By this I mean bringing home, to the reader of a national publication what has there attracted his attention. That the public is reading our national advertising there is no doubt, this has been proven by Dr. Mars, publicity director, time and again. Therefore when the prospective builder finds thru local publicity that he has a local representative (probably an acquaintance) who is in position to give him helpful and more specific service in the ramifications of brick construction, then does his interest become more acute and specific. In this way, I maintain, we get the utmost for the money spent in national publicity.

We therefore first consulted our local architects that we might have their approval in presenting the American Face Brick Association designs. After examining the books and drawings submitted, their consent was readily obtained, on the ground that plans and specifications so complete as these would create a tendency for more accurate planning and better construction, which tendency, it was felt, would ultimately be to the advantage of architects. We therefore advertised these books of plans for sale (not to be given away) and a promise to be of whatever service we could. We would endeavor at the time of a purchase to have an interview with the prospect at our office. We then made a record of the prospect's name and address.

Use Pictures from A. F. B. A. Books

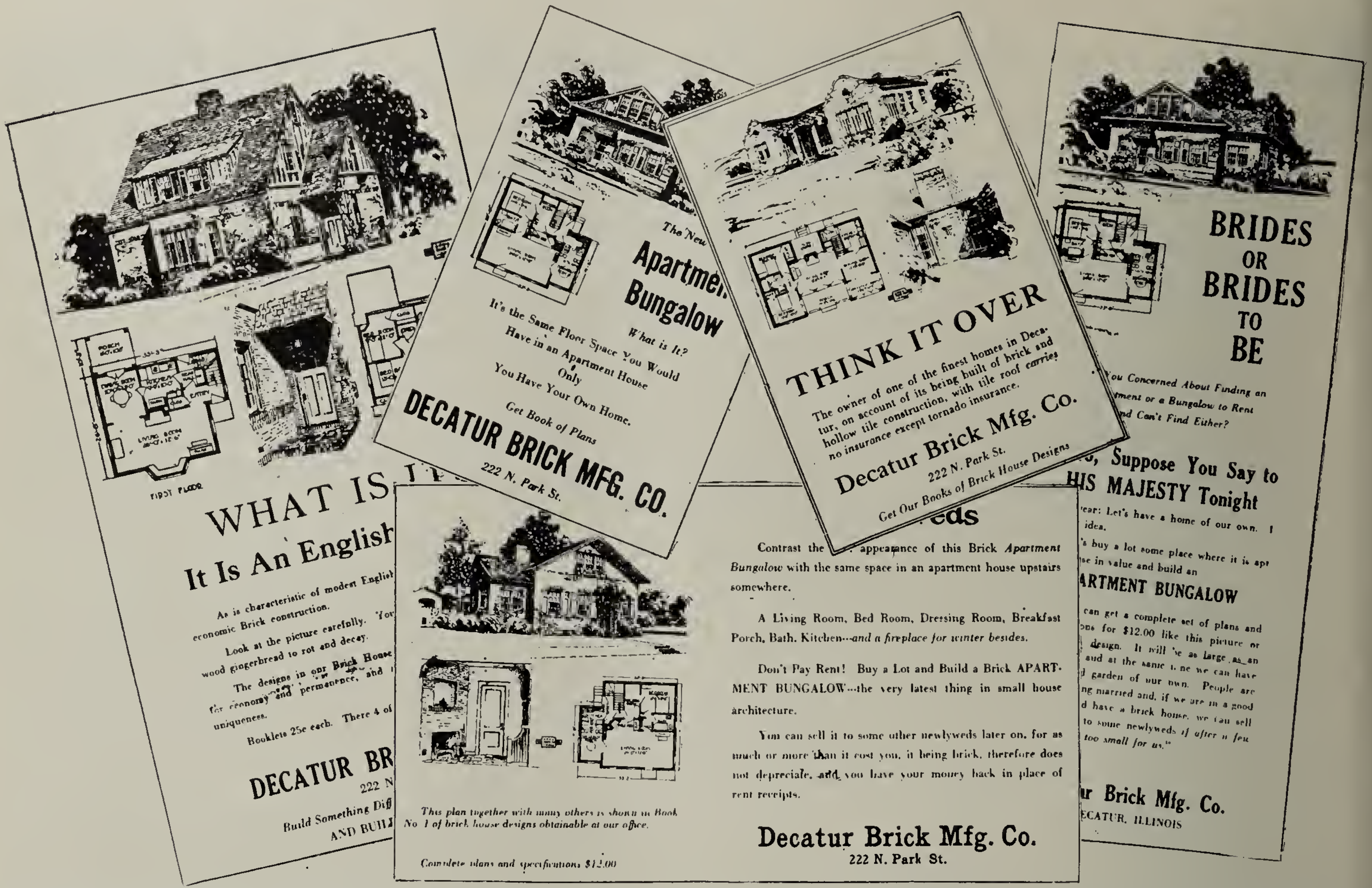
In 1920 we used "Home of Beauty" and in 1921, pictures from the four new Bungalow Booklets. The reading matter for the ads was prepared by ourselves, and we have always been careful not to have too much reading matter accompanying an illustration. Personally, I am a great believer in getting an "impression" across from an advertisement rather than trying to outshadow Daniel Webster with a lengthy argument. As the public responded to these ads the writer spent many hours going over their building problems with these people. It can readily be seen that thru these advertisements there is established a direct point of contact with a person actually interested in building. The prospect stays on our list of prospects and is followed up personally or by correspondence until he finally builds a brick house, which, of course, is always the case. I remember one instance when a man brought in a set of A. F. B. A. plans which he had secured in another city, and from which he built a bungalow. He said he had not been much interested in the plan until it was brought to his attention again by seeing the cut of same illustrated in the local paper, after which he decided to use the plan. During this newspaper campaign last year a local lumber dealer, and a friend of the writer at that, started a contemporary advertising campaign, "Build with lumber, the cheapest building material," but just the same he said to me once that the time was fast approaching when wood would be little used as an exterior building material.

Other Advertising Is Helpful

We have not confined ourselves to newspaper publicity alone. We have done some residential building ourselves, getting actual local cost comparisons, by taking bids under an assumed name on frame, brick veneer, and brick and tile construction. These comparisons have been extensively published, and the people of at least our city are pretty well educated to the fact that a brick house costs not to exceed from six to ten per cent. more than frame, in contradiction to the previous general belief that the cost was from 25 to 30 per cent. more.

At another time we offered substantial prizes for the best composition written by a student in the grades on "Why Build With Brick?" This was given wide publicity, and created a lot of brick talk (propaganda) in other words. We also feel that a large attractive sign by itself, on a thorofare, advising the passerby to "Build with Brick, the Everlasting Material" is helpful publicity for us. For goodness sake, keep the sign painted and nifty, tho.

A man once said to me he was going to build a house, and that his wife wanted one of those Dutch Colonial white pine houses. (I wonder where she ever got that idea, anyway.) On my first interview with this lady she said, "What! One of those old dingy, damp brick houses, like the ——— homestead." Do you know that poor soul had been riding all over town in a car and had never noticed the pretty, modern types of brick houses. When I proceeded to be her chauffeur and focused her attention on the many possible effects obtainable in modern brick work she was astonished. The result was


FIRST FLOOR

WHAT IS

It Is An English

As is characteristic of modern English

economic Brick construction.

Look at the picture carefully. You

wood gingerbread to rot and decay.

The designs in our Brick House

for economy and permanence, and

uniqueness.

Booklets 25c each. There 4 of

DECATUR BR

222 N

Build Something Diff

AND BUIL

The New

Apartment Bungalow

What is It?

It's the Same Floor Space You Would Have in an Apartment House Only You Have Your Own Home.

Get Book of Plans

DECATUR BRICK MFG. CO.

222 N. Park St.

THINK IT OVER

The owner of one of the finest homes in Decatur, on account of its being built of brick and hollow tile construction, with tile roof carries no insurance except tornado insurance.

Decatur Brick Mfg. Co.

222 N. Park St.

Get Our Books of Brick House Designs

This plan together with many others is shown in Book No 1 of brick house designs obtainable at our office.

Complete plans and specifications $12.00

eds

Contrast the appearance of this Brick *Apartment Bungalow* with the same space in an apartment house upstairs somewhere.

A Living Room, Bed Room, Dressing Room, Breakfast Porch, Bath, Kitchen—*and a fireplace for winter besides.*

Don't Pay Rent! Buy a Lot and Build a Brick APARTMENT BUNGALOW—the very latest thing in small house architecture.

You can sell it to some other newlyweds later on, for as much or more than it cost you, it being brick, therefore does not depreciate, and you have your money back in place of rent receipts.

Decatur Brick Mfg. Co.

222 N. Park St.

BRIDES OR BRIDES TO BE

You Concerned About Finding an ment or a Bungalow to Rent nd Can't Find Either?

Suppose You Say to HIS MAJESTY Tonight

ear: Let's have a home of our own. I idea.

's buy a lot some place where it is apt se in value and build an

ARTMENT BUNGALOW

can get a complete set of plans and ons for $12.00 like this picture or design. It will be as large as an and at the same time we can have garden of our own. People are ng married and, if we are in a good d have a brick home, we can sell to some newlyweds *if after a few too small for us.*"

ur Brick Mfg. Co.

ECATUR, ILLINOIS

Some of the Samples of the Decatur Brick Manufacturing Co. Advertising. The Illustrations Are Taken from the American Face Brick Association Plan Booklets. Care Has Been Taken Not to Use Too Much Reading Matter in the Advertisements.

these people built a brick house, and backed it up with hollow tile besides.

Shows Local Brick Homes Thru Slides

This instance gave me a cue, to draw attention to creditable examples of modern brick work, and we therefore utilized the movie for this purpose. We had some very pretty slides of local residences made in colors, giving the name of the owner, with his consent. The only reading matter on the slides being for example,

Attractive Brick Residence
of
Mr. Gordon Tilden,
Park View Drive.

People are often familiar with the names, make a mental note, and drive past the places. More humble cottages are illustrated in the outlying neighborhood theaters. This, of course, is practical only in cities of say 50,000 or less, where folks know a few people in town other than the janitor of their flat. To my mind there is scarcely a subject in the way of advertising flashed on a screen, which registers on the mind so well as a pretty brick residence in colors.

Results of Local Advertising

Granting that we have done this advertising in our city, "The biggest little city on earth," where Abraham Lincoln practiced law, etc., what has been the result? To start with, the people are getting familiar with brick construction. Second, they are talking brick construction. And third, last year, a bad building year, according to the best data available there were *more brick houses built* in Decatur than in any city in the state outside of Chicago. But then Decatur is a good town anyway. The same can be done in other cities where manufacturers have a local market, or by dealers who are aggressive and recognized brick jobbers. In this connection I might express the humble opinion that in view of the fact that manufacturers are putting forth a costly effort to nationally popularize brick construction, that the local dealer should put forth a supreme effort in the way of local advertising when he is the local distributor, and he should be very reticent to ask help from his manufacturer for this purpose. Ultimately the result of the manufacturer's national publicity will find its way profitably to the pocket of the dealer.

Local Advertising Pays

In sum total I believe that our national publicity should be augmented locally to the largest possible extent by the manufacturer when he has a local market, or by the dealer, as the case may be, in order that the utmost benefit may be derived by the industry, which in a few years has changed from overalls to evening clothes, at least from the standpoint of dignity, if not yet profit. But advertising makes volume, and volume makes profit.

* * *

DEVICE CUTS OUT MORTAR BETWEEN JOINTS

A new machine for cutting out the mortar between the brick and building stones before tuck pointing, has been placed on the market. The machine is equipped with one-fourth H. P. motor operating at 3,500 r. p. m. The shaft is direct connected to the motor, and is $\frac{5}{16}$ inch in diameter, five feet long, suitable for transmitting one-fourth H. P. This shaft is provided with metal wound casing, hand piece and guard. The wheel used in connection with this operation is a special rubber bond wheel, and can be furnished in varying widths to accommodate the work on hand. The diameter of the wheel is six inches. It is stated that on one Chicago job one of these machines is doing the work of five men.

The Building Situation

CONSTRUCTION WORK in the New England district continues to exceed from week to week the figures for the corresponding period of 1921, with amounts varying from $700,000 to $1,000,000. Operations are falling short of the records for 1920 by practically a corresponding amount.

Brick prices are declining slightly in the Boston territory. With some companies holding to $18 a thousand for New York stock, others, including the New England Brick Co., are offering the material at $16 in truckload lots, delivered. New England production is priced at $20 and $21 a thousand, on the job. Selected water-struck brick is bringing $32, and kiln run material, $30.

Sewer pipe is quoted at 11 cents to $4.90 a foot, in carload lots, f. o. b., according to size; three inch material is 11 cents, five inch at 16 cents, eight inch at 25 cents, 12 inch at 49 cents, 24 inch at $1.62, and 36 inch is $4.90. Flue lining stands at 50 per cent. off list; wall coping, 45 per cent. off; and fire clay at $25 a ton, delivered.

Fire brick, boiler No. 1, is priced at $60 a thousand, and high grade material, at $70. Hollow tile continues at $96 a thousand in carload lots for 4x12 inch size, $182 for 8x12 inch, and $248 for 12x12 inch.

Prices Decline at Providence

Common brick and other basic materials are at lower levels in the Providence, R. I., market. Brick is priced at $20 to $24, delivered, with very good grade material selling at $22. Water-struck brick is at $32, and fire-brick at from $68 to $90, according to selection. Vitrified paving block, standard 3½x8½ inch is $50 and $52 a thousand, delivered. Drain tile, three inch, is quoted at 12 cents a foot, and four inch stock at 16 cents.

Heavy Construction at New York

Building contracts awarded in Greater New York, including all five boroughs, during January aggregated $33,460,500, or more than four times the total for the corresponding month of last year. The month showed a decline of about 25 per cent. as compared with the figures for December, but this can be attributed distinctly to the season. Residential work holds as the predominating factor, the January total for this character of construction being $24,537,700, or about 73 per cent. of the aggregate.

The statement of the Lockwood Legislative Committee that New York has a shortage of 80,000 homes at the present time, or proper housing for about 400,000 persons, is denied by a number of prominent local builders interviewed by a representative of Brick and Clay Record, and it is pointed out that numerous vacancies exist in recently completed apartments and dwellings.

The situation is well in hand, it is shown, and the house construction now under way and projected, will more than provide for all immediate demands, in the judgment of a well-known local operator. And in this respect, reference is made to the construction figures mentioned in these columns in the last issue of Brick and Clay Record.

Building Materials Firm

The best grades of Hudson River common brick are selling in the New York market at $17, wholesale, along side dock, with delivered price at $19 and $19.50. Sales have been at a low point for the past fortnight. Yard sales are fair.

Inland brick manufacturing plants at Mechanicsville, Cohoes and vicinity are arranging for rail shipments to the New York market, and a number of incoming loads are expected. The Hudson River remains ice-bound and closed to the shore yards.

Production is at a low point in the Hudson River district, mechanical drying plants only going ahead. Seasonal producers are commencing to prepare for the 1922 run, and present indications show that this will be heavier than for several seasons past.

There is growing strength in the local face brick market, and defined tendency for advancing prices. Figures now hold at from $45 to $55 a thousand for the different popular varieties, and some few heavy advance orders have been placed for early spring delivery. The Hay-Walker Brick Co., one of the prominent concerns in this line, is active, and is handling a number of interesting inquiries.

Good Construction in New Jersey

Building totals for January in the different New Jersey centers, including Newark, Paterson, Jersey City and other points in northern Jersey, and Trenton in the south, show good progress. At Newark, work reached a total of $1,025,379 in this month, as compared with $375,884 in January of a year ago, or nearly three times greater. Dwelling work absorbs $508,300 of the amount, while garage work totaled $58,000.

Common brick is being retailed at $18 to $20 in the different New Jersey cities. Newark holds to the higher level for New York brick, and about $1 less for Hackensack stock. Paterson and vicinity are pricing the latter at $18.50 and $19, while Jersey City is concentrating more on Hudson River varieties at $20. Trenton producers are asking around $18 for delivery on the job, with $15.50 and $16, the popular kiln prices.

Fire brick is averaging $75, for regular standard stock, and paving block from $50 to $55, for three inch and four inch sizes. Partition tile is running from $120 a thousand square feet upwards, according to size. Good grade face brick averages $45 and $50 in the various localities.

The new municipal market at Newark, N. J., estimated to cost over $1,000,000, and utilizing large quantities of burned clay products, presents a comprehensive idea of prevailing figures for such materials in place. Common brick laid approximates $45 a thousand; face brick, $65; hollow tile, six inches, set flush with inside face of piers, 50 cents each; white wall tile, $1.35 a square foot; eight inch wall tile, 65 cents a square foot; frieze and base, $1.00 a foot.

January Record Month at Philadelphia

January, 1922, broke all records for building construction at Philadelphia, Pa., being the biggest month in the history of the local building department. The estimated valuation of plans filed was $4,411,300, and of this total, dwelling work represented $1,634,900; plans for 403 such buildings were filed.

Housing operations are still advancing, and since the first of February, operations calling for many blocks of brick dwellings have been filed.

Common brick is $17 to $17.50, delivered on the job. Producers with steam drying facilities are maintaining active manufacture to supply the call. Yard prices are around $16 for best stocks.

Hollow partition tile has recorded a decline at Philadelphia, 4x12x12 inch selling for $95 in carload lots in the wholesale market; 8x12x12 inch material is priced at $175; and 12x12x12 inch, at $255. Fire brick is quoted at $70 and $75, delivered.

Wilmington Advances

Wilmington, Del., has recorded a substantial increase for construction in January, as compared with the corresponding month of last year, the totals standing at $198,617 and $41,504,

(*Continued on page* 316)

Current Prices of Common Building Brick Six Inch Drain Tile and Hollow Building Tile

IT HAS BEEN nearly six weeks since the publishing of the last price list in Brick and Clay Record, and since that time several changes have occurred. Of the cities listed below, 20 have changed the common brick price. 15 of these price revisions were downward, and five showed increases. New Haven, Conn., which has steadily held at $25, has receded to $21. Allentown, Pa., dropped $3.50 to $20, and Richmond, Va., reduced the price from $20 to $16. Other downward revisions in common brick were very slight. One of the surprising factors in the price sheet this time is the advance in the New York price from $17 to $20.

Six-inch drain tile is holding very steady at established prices, and only seven cities have found it necessary to revise them. Revisions, as a rule, were small, altho in the case of Rochester, N. Y., the price jumped from 11 to 18 cents.

Only six cities have changed the price of 5x8x12 hollow tile in the last six weeks, and five of these were reductions, the most notable reduction being that in Miami, Fla., a drop of $45, from $180 to $135. Detroit, Mich., prices increased $5.

	Common Brick Per M	Drain Tile (6″) Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.		**.15**	
Boston, Mass.	17.00	.186	
Providence, R. I.	24.00	.30	
Hartford, Conn.	16.00	**.15**	
New Haven, Conn.	**21.00**	.125	
New York City	**20.00**	....	117.90
Albany, N. Y.	20.00	.155	200.00
Utica, N. Y.	**18.00**	.129	
Syracuse, N. Y.	18.00	.125	
Oswego, N. Y.	27.50	.07	
Binghamton, N. Y.	16.50	.105	
Elmira, N. Y.	**28.00**	....	
Rochester, N. Y.	16.50	**.18**	
Buffalo, N. Y.	22.50	.12	95.00
Jamestown, N. Y.	25.00	....	110.00
Allentown, Pa.	**20.00**	....	
Erie, Pa.	**23.00**	.095	70.00
Philadelphia, Pa.	17.00‡	....	
Reading, Pa.	20.00	....	
Pittsburgh, Pa.	16.00	.12	60.00
Scranton, Pa.	**21.00**	.14	
Newark, N. J.	20.00	.1675	100.00
Paterson, N. J.	19.00	.17	
Trenton, N. J.	17.00	....	
Wilmington, Del.	22.00	....	85.00
Washington, D. C.	19.00	.11	
Baltimore, Md.	21.00‡	.14	
Norfolk, Va.	16.00	.12	
Richmond, Va.	**16.00**	.125	
Huntington, W. Va.	15.00	.12	75.00
Fairmont, W. Va.	27.00	.10	75.00
Wheeling, W. Va.	21.00	.09	65.00
Atlanta, Ga.	12.35*	.11	
Miami, Fla.	25.00	....	**135.00**
Tampa, Fla.	18.00	....	120.00
Louisville, Ky.	18.00	.084	**79.00**
St. Petersburg, Fla.	17.00	....	120.00
Lexington, Ky.	19.00	.11	80.00*
Memphis, Tenn.	14.50	.09	90.00
Nashville, Tenn.	15.00	.14	**109.00**
New Orleans, La.	13.00	.12	
El Paso, Tex.	16.00	....	90.00
Houston, Tex.	**21.50@**	....	95.00
Dallas, Tex.	12.72*	.20	95.00
Little Rock, Ark.	12.50*	.15	
Oklahoma City, Okla.	17.00	....	90.00
Cincinnati, Ohio	18.00*	.09	68.00
Cleveland, Ohio	14.00	**.07**	50.00
Columbus, Ohio	16.50	.08	
Toledo, Ohio	15.00	**.075**	70.00
Detroit, Mich.	**17.00**	.12	**84.00**
Evansville, Ind.	14.00	**.04**	55.00
Fort Wayne, Ind.	18.00	.07	65.00
Indianapolis, Ind.	**19.50**	**.10**	67.50
South Bend, Ind.	**19.00**	.04	95.00
Terre Haute, Ind.	16.00	....	
Bloomington, Ill.	20.00	.09	75.00
Chicago, Ill.	12.00	.10	59.00
Moline, Ill.	**18.00**	.11	48.50
Peoria, Ill.	**14.00**	.12	49.00
Green Bay, Wis.	14.00	.08	85.00
Milwaukee, Wis.	**14.50**	.09	**80.00**
St. Paul, Minn.	18.00	.09	75.50
Davenport, Iowa	17.50	.11	113.00
Des Moines, Iowa	**17.50**	**.08**	**80.00**
Sioux City, Iowa	19.50	....	80.00
Kansas City, Mo.	22.00	.0625	**75.00**
St. Louis, Mo.	**14.00**	.15	70.00
Lincoln, Neb.	17.00	.10	73.50
Denver, Colo.	14.00		85.50
Butte, Mont.	19.00	....	15.00§
Los Angeles, Calif.		.0975*	100.00§
San Diego, Calif.	19.00	.14	120.00
San Francisco, Calif.	17.00	.065	112.00
Portland, Ore.	**17.00**	.10	95.00
Seattle, Wash.	15.50	.10	110.00
Cheyene, Wyo.	22.00	....	
Winnipeg, Man.	**18.00**	.15	105.00
Toronto, Ont.	18.00	.11	
Halifax, N. S.	20.00	....	
Quebec, P. Q.	16.50†	.115	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, Building Supply News, and are sent to this paper by dealers in the various cities listed. Brick and Clay Record will appreciate any corrections. The prices marked in heavy type denote changes from last list.

*Little Rock, Cincinnati, Los Angeles, Atlanta, Lexington Dallas, f. o. b. cars.

‡Philadelphia, Baltimore, f. o. b. job, manufacturers retail price

§Los Angeles, Heath tile; Butte, per ton at yard.

@Hollow tile, Houston, car loads.

†Quebec, common brick, f. o. b. sheds.

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

SILICA HAS MANY USES

A REMARKABLE VARIETY of uses for one of the most widely distributed constitutents of the earth's crust, silica, is named by the United States Bureau of Mines as the result of a study of the possibilities of this material. Silica in its various forms, as quartz, quartzite, sandstone, flint, tripoli, diatomaceous earth, sand and gravel, and so forth, finds its way into the construction of the houses in which we live, into the tooth paste which most of us use daily, into the phonograph records which regale us with "canned music", and into the thousand-and-one glass products.

Silicon dioxide occurs in a free state chiefly as quartz, but hydrous silica occurs as opal, flint, diatomaceous earth, tripoli and so on. Quartz is found in many forms, the most important of which are: As vein quartz; quartzite; sandstone; silica sand and gravel; as crystals or crystalline grains, masses or aggregates in igneous rocks such as granites, diorites and pegmatites.

Commercial Silica Deposits Rare

Free silica in its varied forms is very widely distributed, but deposits of commercial value are far less common. However, with the exception of such relatively scarce materials as tripoli and flint grinding pebbles, most forms of silica are sold for such low prices that economic factors, such as proximity to railroads and to local markets, govern the value of a deposit. Thus deposits of glass sand may be valueless if located far from supplies of cheap fuel and far from large centers of consumption for glass.

Methods of mining the various siliceous materials vary widely, dependent on the form of the material, nature and location of deposits, and type of product to be made, the Bureau of Mines found. Most of the deposits are worked by open-pit or quarrying methods, often in a very crude way. Sand deposits may be worked by hydraulicking, by dredging or by the use of a steam shovel. Vein quartz is often obtained as a by-product in the mining of other materials. Pegmatite quartz is almost always obtained as a by-product in working pegmatite dikes for feldspar or mica.

Use Silica in Cleaning Compounds

Various forms of silica, in a finely ground state, enter into the composition of scouring and polishing soaps and powders, toothpowders and paste, quartz, quartzite, sandstone, and sand, coarsely ground and closely sized, are used in the manufacture of sandpaper. The same material, crushed into sharp grains, uniform in size, are used in sand-blast work. For saving and polishing marble and granite, sharp, clean sand graded into various sizes is used. Massive sandstone, very fine to moderately coarse grained, is used for whetstones, grindstones, pulpstones, and oil stones. Chert, flint and quartzite in dense solid blocks are used for tube-mill lining. Rounded flint pebbles are extensively employed in tube mill grinding.

In making silica firebrick and other refractories, fairly pure quartz known as gannister is used. In making silicon, ferrosilicon and silicon alloys of other metals, such as copper, moderately pure sand and massive crystalline quartz are employed. Massive quartz and quartzite are used as a flux in smelting basic ores. Fine sand and ground tripoli enter into the composition of foundry parting sand.

Used as Filtering Medium

In the various important chemical industries, massive quartz or quartzite are used as linings for acid towers. Various forms of silica are used as filtering mediums, and pure quartz sand is used in the manufacture of sodium silicate and carborundum. Paint manufacturers employ finely ground silica of various varieties as an inert extender. Finely ground silica of all types is used as a wood filler, and as a filler in rubber, pressed and molded goods and in phonograph records.

In the pottery industry, flint, chert, and other forms of silica, finely ground, are used as ingredients of bodies and glazes. Pure quartz sand is employed in the manufacture of ordinary glass. Very pure massive quartz is employed in the manufacture of chemical apparatus, such as tubes, crucibles and dishes.

Types of Silica in Decorative Materials

The manufacture of decorative materials such as crystal balls, table tops, vases and statues requires the use of less types of silica such as rock crystal, amethyst, rose, quartz, citrine quartz, smoky quartz, chrysoprase, agate, chalcedony, opal, onyx, sardonyx and jasper.

Massive and ground diatomaceous earth is employed in the making of heat insulation for pipes, boilers, and kilns, and sound insulation in walls and between floors. Moderately pure sharp angular sand is one of the principal constituents of sand-lime brick. For the manufacture of lenses and accessories for optical apparatus, clear, colorless, flawless rock crystal or massive crystallized quartz is employed.

⁂

CHICAGO EXHIBIT SPLENDID AFFAIR

Approximately 321 firms were represented at a mammoth exhibit of glass, pottery, lamps and house furnishings in Chicago, which exceeded in size and completeness the annual exhibit held at Pittsburgh, Pa. Every floor from the second to the ninth, inclusive, of the big Morrison Hotel was filled with exhibits. February 6 marked the opening of the exhibit, which was continued thru to February 18.

Of the 321 firms represented, approximately 80 were pottery companies, including, besides manufacturers, also decorating companies and some dealers. Since this exhibit was the first in Chicago in many years, pottery manufacturers took great pains to show very complete lines, and the displays in almost every case showed practically all of the company's important lines. In splendor of exhibits the Chicago show exceeded that held in Pittsburgh recently, but in volume of sales it probably cannot boast of such a large amount. Since the Pittsburgh exhibit is the annual one, the large buyers had placed their orders prior to coming to Chicago, and it was found that the most orders placed at the Chicago exhibit were found to be more or less small. It is probably safe to say that a greater number of purchasers came to the Chicago exhibit, but the size of the individual sale on the average was considerably smaller. Some of the exhibitors did a tremendous business.

On the whole, it has been very successful and entirely up to the expectations of the manufacturers. It is impossible to say at this time whether it will become an annual feature.

⁂

URGES COMMUNITY TECHNICAL SERVICE

A. V. Bleininger, head of the Research Department of the Homer Laughlin China Co., Newell, W. Va., in an address before the Rotary Club at East Liverpool, Ohio, February 14, urged the creation of a community technical service so far as it relates to the ceramic industry. It order to keep step with the times and to progress as the industry should, Mr. Bleininger said, the old idea of isolation and distrust must be swept away entirely as far as the relations between manufacturers are concerned. He urged the opening of a ceramic library in connection with the public library, where a collection of the best books and up-to-date literature on the subject of ceramics would be available to all. This work was started some years ago, and should be brought to completion. Mr. Bleininger also stated that nothing would be a better advertisement of the city than a ceramic museum, comprising not necessarily a valuable artistic collection but rather one containing specimens of good commercial ware from all over the world. It would be desirable also to include samples illustrating the development of the art in this district from the historical standpoint. There should be facilities, he said, to make it possible for the ambitious young man to learn the art of manufacturing ceramic ware.

Mr. Bleininger also called attention to the vast deposits of the so-called Lower Kittanning clay, one of the best buff burning clays in the world. He stated that there was no reason why other ceramic plants, such as terra cotta or faience manufacturers, could not be established to develop these ample deposits.

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H. C. MUELLER SPEAKS TO STUDENTS

Herman C. Mueller, head of the Mueller Mosaic Co., Trenton, N. J., gave an interesting address at the School of Industrial Arts, February 8, before the students and other guests on the subject of "Industrial Training."

⁂

CROWD ATTENDS POTTERY OPENING

More than 1,500 people attended the opening of the Merced plant of the California Pottery Co., whose headquarters are in San Francisco. The first unit of the half-million dollar plant of this company is now in operation. The work on the plant started in March, 1921, after officials of the company had visited all sections of the state and had finally chosen Merced as the proper location an account of the fine clay deposits there.

The first unit consists of four kilns which have a capacity of sixty 20-ton carloads of material per month. The company is now producing hollow tile and running to full capacity. The present plant represents an expenditure of $120,000 and building will continue until the entire plant totalling $500,000 is built. About 400 skilled laborers will be employed when the plant is completed. A model frontage will comprise the exterior of the main building which will extend for 600 feet along the state highway. It will be of mission design, with tile roofs and mission towers.

⁂

ORDERS COMING INTO POTTERY MARKET

According to F. M. Ransbottom, president of the American Clay Products Co., of Zanesville, Ohio, the pottery business and clay products industry is practically back to normal and everything indicates a good business for 1922. Mr. Ransbottom bases his predictions for this year on the report of his salesmen who say that stocks are low and that dealers are beginning to replenish. The orders will not be given as lavishly as during the war period as dealers are exercising greater caution but there is a healthy and growing demand for staple goods including utility articles.

The last three months of 1921 were particularly dull. Dealers had overstocked during the war and sales were slow. The volume of orders now is for kitchen crockery, rather than fancy ware.

⁂

FINE DISPLAY AT BIRMINGHAM EXHIBIT

A clay pottery exhibit, typically American, is being held in the "Little Gallery" in the Watts Building, Birmingham, Ala.

This is an exhibit of the first clayworkers of America, as well as of the present day. The exhibit commences with the work of the American Indians and runs down to modern times, showing much of the beautiful work being done with clay today.

The exhibit is the most wonderful clay exhibit ever seen there. It is in ten sections, and includes: American Indians, Southern Mountains, Newcomb, Paul Revere, Durnant, Van Briggle, Rookwood, Niloak, Dedham, Lenox, Fulper and Roseville.

Besides showing articles made of clay the exhibit shows the various kinds of wonderful clay to be found in Alabama and other sections of the south. Experts say that Alabama contains some of the clays of a number of kinds to be found in the United States.

⁂

ORGANIZE POTTERY SALES COMPANY

The Ceramic Pottery Co. has been formed at East Liverpool, Ohio, by Bensley Percival and John P. Henke, with a capital stock of $10,000 and has obtained an Ohio charter. The concern will be a selling organization.

⁂

POTTERY DRAWS MUCH ATTENTION

A great drawing card for tourists passing upon the highway from Asheville, N. C., to Canton, is the Omar Khayyam Art Pottery, located at Luther. Here the skilled proprietor, O. L. Bachelder, fashions many beautiful and useful articles of pottery which adorn homes both grand and humble thruout the country. His work has attracted much attention and praise from artists in distant cities.

⁂

MAY BUILD POTTERY AT VALLEJO

Louis A. Steiger, formerly president of the Steiger Pottery Co., San Francisco, announced to the board of directors of the Vallejo Chamber of Commerce, at a recent meeting, a project to build a pottery factory in Vallejo, Cal., in the near future, for which bond options totaling $125,000 have already been issued, he said. According to Mr. Steiger, the project could be ideally carried out there, both by reason of the shipping facilities afforded by the city and because of the advantageous proposition which the chamber of commerce could make to this concern if the project is approved.

Members of the chamber stated that the concern was one established before the war and was forced to close down on account of fuel restrictions. The officials of the company are anxious to relocate in order to carry on the business built up before the enforced suspension. Financially supported by the bondholders and others interested in the former company, Mr. Steiger declared that all that was needed was a site from which to begin operations once more.

⁂

PLANNING TO START POTTERY

The J. H. Balmer Co., Passaic, N. J., manufacturer of sanitary ware, has leased a portion of the building at 67 Hamilton Street, Newark, N. J., for a term of years, and will establish a new plant at this location. It is proposed to inaugurate operations at an early date.

⁂

ACQUIRES NEW BRANCH PLANT

The Standard Sanitary Mfg. Co., Bessemer Building, Pittsburgh, Pa., has acquired the plant of the Goodyear Tire & Rubber Co., Jackson Avenue and Honeywell Street, Long Island City, N. Y., for a new eastern plant. The property consists of a six-story industrial building, aggregating about 69,000 square feet of floor space, and was secured for a cash consideration said to be $500,000. Possession will be taken at an early date. The company is making extensions to its Pittsburgh plant on Preble Avenue, and has filed plans for the erection of a one-story building, 117x130 feet, estimated to cost about $22,000. At its Louisville, Ky., works, the company has awarded a contract to the George Rommel Co., 956 Logan Street, Louisville, for the construction of a one-story addition, 56x175 feet, estimated to cost about $75,000. It will be located at Sixth and A Streets, and ground will be broken at once.

⁂

TO EXPLOIT MINERAL DEPOSITS

Following reports made by Carl Yeager, German chemist, who has been making an intensive study of the mineral deposits in western North Dakota, the Gladstone Aluminum & Chemical Manufacturing Co. has been organized in that city. The company has a capital stock of $200,000 and is backed by Felix F. Hummer, Jacob Krier, Frank Thomas, Anthony F. Reilly and John Kampf, all local men. Development of the valuable clay deposits in their locality will be started early in the summer, and glass, aluminum, tile, brick and other products will be manufactured at the plant.

⁂

CULTIVATING ESKIMO TRADE

The largest pottery, porcelain ware and allied wares exhibit ever held in Pittsburgh came to a close January 28. Predictions that the total number of carloads of goods sold would be more than twelve hundred, with a wholesale cost of $8,500,000, were made by the several exhibitors, among them Samuel A. Weller, of Zanesville, Ohio. The pottery business is due for a tremendous growth in the next year, according to Mr. Weller. He said that the economic situation was righting itself by degrees, bringing a gradual return of confidence on the part of the buyer, seller and the public. He predicted a complete return to normal by 1923.

Mr. Weller has just started building a new $200,000 laboratory at his factory at Zanesville, where he will centralize all experimental work under the direction of the famous Japanese Tadayoski Takira. Mr. Takira is the greatest Occidental authority on pottery making and decorating.

Mr. Weller has also started to establish 27 European agencies for his pottery and has invaded the frozen Arctic regions. The plan is to bring more art into the lives of the white traders and whalers who live all year round on the north and northwestern coasts of Alaska and 500 miles within the Arctic circle on the coast of Canada. As many of the Eskimos of those regions are reindeer kings with herds ranging from 500 to 20,000 it is expected that the trade will expand enormously following the initial trip.

⁂

MOVES TO NEW FACTORY

The Hercules Porcelain Co. of Belvidere, Ill., has recently moved to its new and modern factory building which covers 17,000 square feet of floor space. Two new kilns have been built, one 10 feet and one 16 feet in diameter. By rearranging their old machinery in the new location, the company has greatly improved manufacturing conditions. They report business fair, and are now soliciting outside accounts on spark plug porcelains, which heretofore have been handled entirely by a local concern.

⁂

EXCELLENT RESULT WITH DRAG LINE

The recent installation of a large excavator of the dragline type has been productive of excellent results at the clay mines of Golding Sons Co., Butler, Ga. This company has spent considerable for equipment to help reduce the cost of labor. F. P. Golding says, "It is possible that later on we will further equip our plant to handle our Georgia clays for every line of trade that these clays can be used, even outside of the pottery, tile and sanitary lines."

The company operates mines only, and markets clays for the manufacture of saggers, which are used generally by all pottery lines. Mr. Golding says that Georgia clays will some day be used for more purposes than any other clay in the country, not only in the manufacture of ceramic products, but for use as a filler for many things.

⁂

REPORT BUSINESS PICKUP

Officials of the George H. Bowman Co., Cleveland, Ohio, which operates six factories devoted to the manufacture of pottery and chinaware, report that there has been a noticeable pick-up in the business during the past few months. Their plants are all operating near capacity and plans are underfoot to enlarge one unit, the Summit China Co., located at Akron, Ohio.

This month especially, has been better than expected. The upward trend in the demand for domestic dinnerware has been felt in a positive manner and while the call for hotel and restaurant table ware has not been as great, there is a steady improvement.

⁂

SELL POTTERY FOR $300,000

The Florentine Pottery Co., Cambridge, Ohio, changed hands recently when the Wheeling (W. Va.) owners sold the plant to the Pfau Manufacturing Co., of Cincinnati, for a consideration of $300,000, it is said. A full line of plumbers' porcelain supplies will be manufactured.

⁂

ONTARIO POTTERIES CO. ORGANIZED

Ontario Potteries Co., Ltd., is being floated with a capital of $300,000 to make earthenware and other pottery. The headquarters is Bowmanville.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

CONSTANTS FOR HEAT TRANSMISSIONS

B.t.u. transmitted per square foot per hour per degree difference in temperature between inside and outside air are as follows:

CONSTANTS FOR BRICK WORK

4 in. thick = 0.68
8 in. thick = 0.46
12 in. thick = 0.33
16 in. thick = 0.27
20 in. thick = 0.23
24 in. thick = 0.20
28 in. thick = 0.18
32 in. thick = 0.16
36 in. thick = 0.15

MISCELLANEOUS CONSTANTS

Reinforced concrete, 20 per cent. more than brick. Add one third more for stone. Add one-half more for cement or concrete walls.

1 sq. ft. of wood as flooring	0.083
1 sq. ft. of wood as ceiling	0.104
1 sq. ft. of wood as wall	0.220
1 sq. ft. fireproof flooring	0.124
1 sq. ft. fireproof ceiling	0.145
1 sq. ft. cement as flooring	0.310
1 sq. ft. dirt as flooring	0.230
1 sq. ft. wood, under slate, or composition roof	0.300
1 sq. ft. wood, under iron	0.170
1 sq. ft. tile (no bds. underneath)	1.250
1 sq. ft. cement roof	0.600
1 single window	1.090
1 single monitor	0.950
1 single skylight	1.118
1 double window	0.560
1 double skylight	0.621
1 door	0.420
Cor. iron wall	0.840
Wood wall	0.280
Copper, silver-plated and polished	0.02657
Copper, polished	0.03270
Zinc and brass, polished	0.04906
Sheet iron	0.08585
Cast iron, new	0.6480
Cast iron, rusted	0.6868
Oil or varnish	1.4800

The amount in square feet of each kind of surface is to be multiplied by its respective constant shown, and by the difference in temperature between inside and outside air. The sum gives the loss of heat in B.t.u. by exposure, then add to the foregoing as follows:

Ten per cent. for northern exposure and where the winds are to be counted on as an important factor.

Ten per cent. if heated day time only, and the location of the building is not exposed.

20 per cent. when the building is heated day time only, and the location of the building is exposed.

30 per cent. when the building is heated during winter months intermittently with long intervals of non-heating.—*Ideal Fitter.*

* * *

CARE AND USE OF ELECTRIC MOTORS

To many people anything electrical is something to be regarded with wonder and admiration. With all due reverence to the "Big Bosses" of Brickdom it is my notion that the majority of them have the same intimate knowledge of the inwards of the big motors which replaced the reliable, inefficient old engine as the average woman has of the thing under the hood of an automobile. They know how to stop and start, and deplore the size of the bills the electric repair shop sends in when things go wrong. So I am writing here some of the things I have found out about how to keep the big repair bills down and to make the motors be good the year round, with a minimum of expense.

In all of the brick plants I have frequented there was always dust in the air. Where it is possible, of course it is best to keep the motors out of this dust. But in most plants the motor has this inconvenience to share with the labor.

The motor windings are cooled by a fan system within the motor which constantly circulates air thru them and with this air goes the dust. Frequently too, oil will either work out of the bearings or in some way drop from them onto the stator windings below the bearings. Oil quickly rots the insulation on these windings. Damaged insulation from any cause in a short time means short circuits and rewinding (costs $300 to $500 plus, takes a week or two). The dust clogs the air passages thru the motor windings, readily unites with a drop of oil and is the consequent cause of much motor trouble. Considering all this preamble, the remedy is simple. Have an expert if possible, or any good machinist or mechanic, remove the rotor, entirely or partly from the stator of the motor (the rotor is the part that revolves and the stator the part which does not revolve), and wash all of the dust and oil from the windings with clean, high-grade gasoline. If any of the wires at the end of the stator windings show damaged insulation wrap them carefully with a couple of layers of friction tape. Finally varnish the accessible windings of both the rotor and stator with the best grade of special insulation varnish. This is obtainable thru any good electrical supply house.

Considering the speed at which most motors run, bearings are a mighty important thing. These bearings are well designed and seldom give any trouble thru heating if the oiling is attended to, but—there is very little clearance between the rotor and the stator, from 4/100 to 4/1,000 of an inch, varying with different types and makes of motors. Even motor bearings wear out in time, and this time may be shortened by grit in the oil (careless filling of the oil chamber of the bearing, with dust on the lip of the filling hole, or perhaps careful filling if much dust is present) poor oil or oiling. Any rubbing of the stator windings by the rotor, due to a worn bearing will of course mean rewinding of the motor, with all of its attendant loss of time and expense.

The observance of this little care will help you keep the friendship of your motor.—*H. L. Longenecker.*

* * *

WANT RECEIVER FOR BIG HORN

The Big Horn Basin Clay Products Co., Lovell, Wyo., has filed a petition in the district court asking that a receiver be appointed for the concern, it is said. R. E. Richardson of Lovell was appointed temporary receiver until the case can be heard in court.

Questions and Answers

Best Authorities in Every Clay
Working Branch Are Called Into
Consultation—Their Advice Is
Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

BETTER COLORS IN FACE BRICK

1,021. *Minnesota—We are making some face brick and have been wondering whether or not you would be in position to find out something with regard to improving color of our brick. We have a clay that is practically red burning, but we are able to make brick from a very dark, almost black, to a light red or pink. The real reds, however are not as bright a red as we would like. What we would like to know is whether or not there is anything that can be done to brighten this red in our brick.*

Possibly you would be in position to refer us to someone that would be of help to us in this matter. We assure you that we would appreciate it very much.

It has been the experience of those concerned who have changed from coal burning over to oil or producer gas that clearer colors were obtainable and better reds produced. The use of barium carbonate is frequently a good medium for bringing about improved and clearer colors. Sometimes by the use of manganese a light red brick can be darkened to produce better colors.

In a recent issue of Brick and Clay Record there have been printed two questions, numbers 1,012 and 1,015, with the answers which give considerable information on the problems propounded in this question. They are reprinted herewith.

CHANGING NATURAL COLOR OF BRICK

1,012. *South Carolina—We would like very much to know if it is possible to secure in any way a dark red color in brick where the natural clay burns a light chocolate brown.*

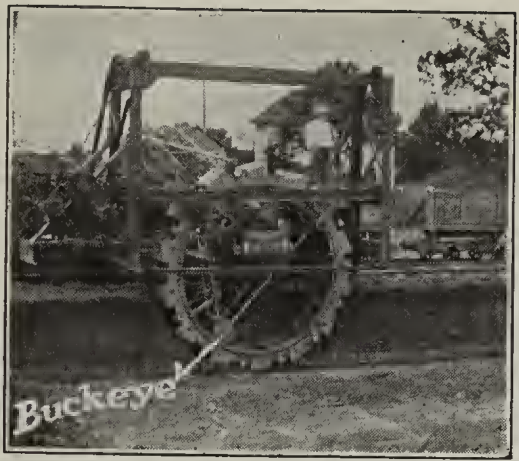
I have thought perhaps there was some preparation that could be mixed with the clay in the pug-mill, or mixed with the oil in the die, or perhaps something used in setting or burned in the furnaces of the kilns. If there is such a thing, will it be costly?

We make an end cut common building brick, but competition is pretty keen and dark red brick seems preferable in our market.

To change the colors to which clays burn naturally is at the least a very difficult matter. Except where the clays are susceptible to color changes due to atmospheric conditions in the kiln, and where material is added in the furnaces to produce a certain color effect, it is almost impossible to change the colors of the brick without it being exceedingly expensive.

We know of instances where a basic clay is used which has the proper physical and chemical properties to produce a good brick but which burns to a poor color, where another clay is used whose working properties are very poor but whose effect on the color of the product is very good. Oftentimes the overburden of a clay or shale serves this purpose in a very excellent manner.

In the case of soft mud brick manufacture, the color is often improved by the use of a special molding sand which brings about the red coloration. This molding sand can be



Prompt Shipment

You pay only for the yardage dug when using a Buckeye—costs only while running.

Ask for catalog about Buckeye Gasoline and Electric Clay Digger.

The Buckeye Traction Ditcher Company
Manufacturers also of Buckeye Traction Tile Ditchers
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LABOR SAVING S-A MFG. CO. AURORA ILLINOIS MACHINERY

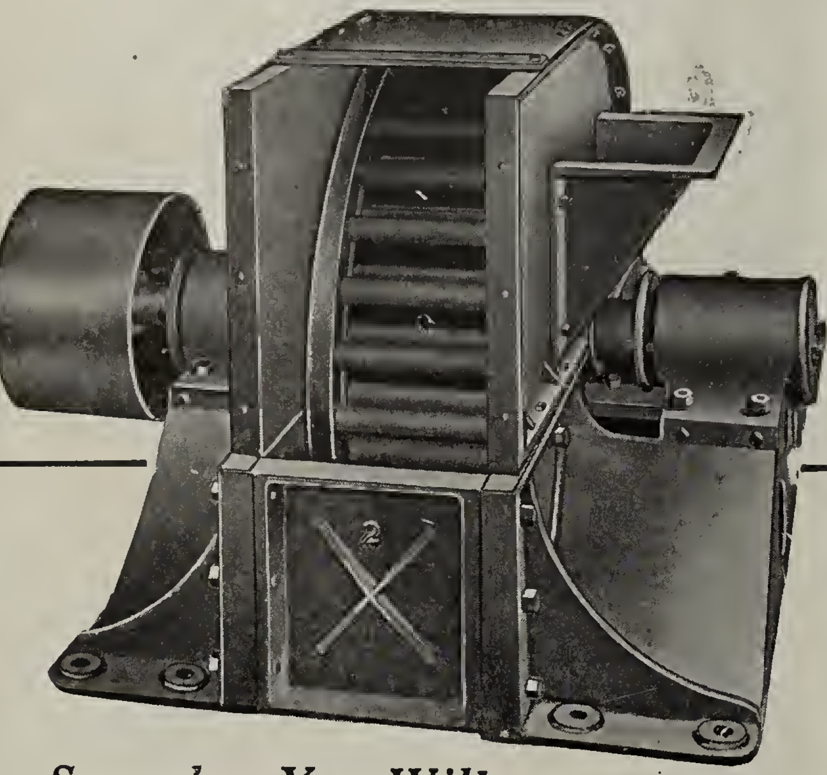
Adel Excavator
The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

S STEPHENS-ADAMSON MFG. CO. AURORA, ILLINOIS A

BRICK MACHINES MIXERS TRUCKS BARROWS
SCREENS MOLD BOXES LINERS



Someday You Will Need a Dependable Crusher

or possibly some other machine for your plant. When that time comes you will find it very profitable to have our latest catalogs on file for ready reference.

Write today for literature

FERNHOLTZ BRICK MACHINERY COMPANY
ST. LOUIS, MO.

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

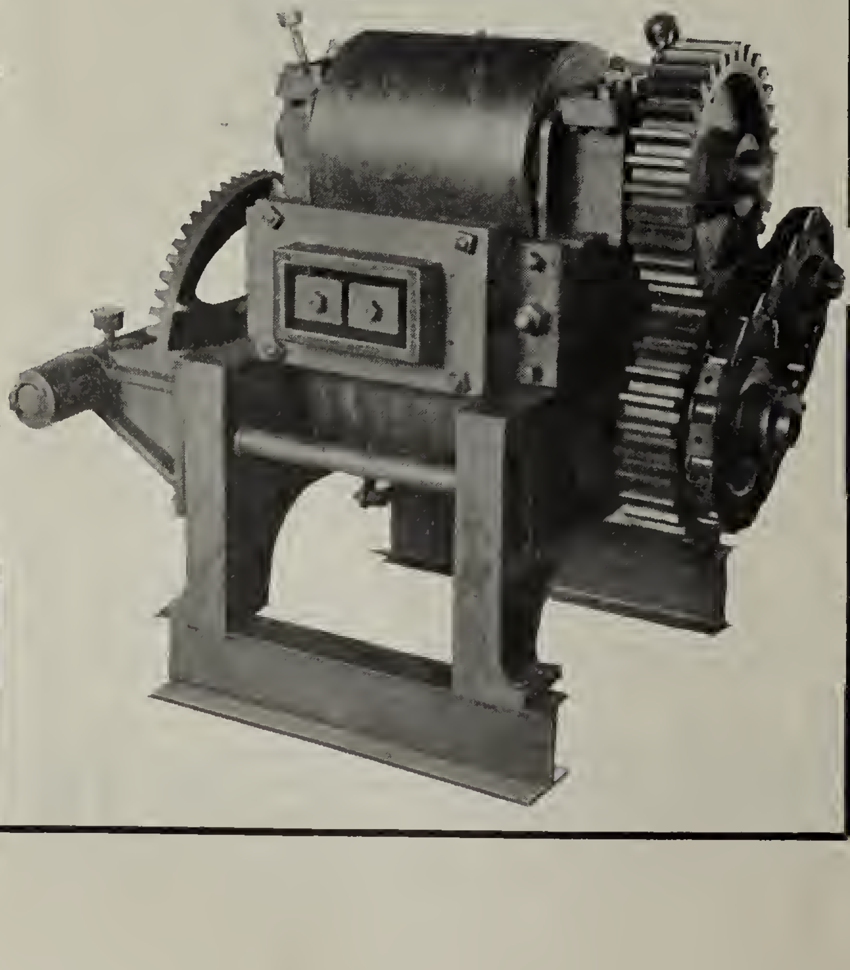
The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

Start now to solve your production problems.

CLAYCRAFT SERVICE COMPANY
503 Wainwright Building St. Louis, Mo
Everything for the Clayworker.



purchased from certain concerns who have such deposits in their holdings.

Altho we know of no instance where this is actually being done, the use of a slip clay such as the Albany slip clay might prove very satisfactory as a coloring agent. It is possible that the clay column as it issues forth from the die can be coated with a paste made up of this clay in much the same manner that enameled brick are enameled on the column.

Albany slip clay burns to a beautiful red at a certain temperature, and if the brick upon which it is used produces a good hardness at the same temperature, it is not altogether improbable that this process may be worked out satisfactorily, and at not too great an expense.

Another method of coloring clay columns is to use an iron oxide of good purity and permit it to run from a hopper placed at the mouth of the die in the form of a powder on the clay column. This powder is then imbedded into the clay column as the column passes under the roller. This method is now being used.

In the Hudson River district, a good many brick manufacturers use a hematite red, sold by one of the mortar color agents. The brick in this vicinity burn fairly red without the use of the coloring material. However, the use of this material iron oxide deepens the shade and enables the manufacturer to sell a lot of brick as No. 1 grade which would otherwise have to be classed as "light hard." We understand that this process more than pays for the cost of the coloring material, which we believe runs about five cents per thousand brick. It is customary with these concerns to mix from one to five quarts of color with each wheelbarrow of molding sand. The coloring material adheres to the surface of the brick as they come from the mold, and it is burned in the brick in the kiln.

The suggestion that the coloring material be added to the oil used in the die is extremely interesting. It is possible that this may work, altho we know of no practical application of this principle.

Altho this is a very dangerous thing to do, since it may cause you trouble due to scumming or otherwise effect difficulties, it would at least be worth trying, adding some finely ground lime to your clay. The lime has the property of masking the colors produced by coloring oxides, and it is possible that the chocolate brown color may be changed to a red, altho this would, of course, be only a gamble. However, it may be worth while to give this method a trial by experimenting with a small quantity of brick and see what the effect is.

Experiments have been made, using a solution of ferric chloride which would analyze 113 grams of ferric oxide per liter. The solution was applied on the column and it was found that the color was improved in the brick.

Experiments whereby ferric chloride was volatilized in the kiln were also made. One-half pound of ferric chloride was put in each fire box and the damper closed until the fumes were coming out of the fire boxes, and the kiln maintained in this condition for one-half hour. By the use of ferric chloride in this manner for several treatments during a burn, it was found that good clean red colors were obtainable.

As stated in the beginning, the problem of trying to change the color to which a clay will naturally burn is a most difficult and expensive one. Sometimes results are obtainable and at other times nothing can be done. The above information gives suggestions for the manufacturer to use, but we can give no encouragement as to the possibility of success.

USE OF BARYTES IN CONTROLLING SCUM

1,015. *Ohio.—We are operating a stiff mud brick plant, dry pans and pug-mill, and would like to learn the method for using barytes to control white scum.*

One concern that we know of adds barium carbonate at the dry pans in a powdered form to the clay as it is being ground. This concern uses approximately 28 pounds of barium carbonate per thousand brick in this manner.

The better way to add barium carbonate to clay is to have two barrels or tanks mounted above the pug-mill, and all the water supplied to the pug-mill should be from the tanks. The barium carbonate in proper quantity should be added to the water in the tank, but since the chemical is not very soluble, it is necessary to have agitators of some kind to keep the chemical in suspension. While the solution is being brought from one of the tanks the other should be prepared.

Barium carbonate has been found to be very satisfactory for preventing scum, and has produced in many instances deeper and richer colors in the brick.

The chemical precipitates the soluble lime salts in the clay and this stops the leaching out of the salts which produces the scum.

Some of the manufacturers who supply this chemical are in a position to give you the results of their experience, which should be helpful to you in case you plan to use this material.

The following suggestion for changing the natural color of brick has been received answering question No. 1,012 reprinted in this department.

"I was very much interested in reading the inquiry, 'Changing Natural Color of Brick' in a recent issue.

"This is a condition that the Hudson Valley brick producers are up against. The deep red color is obtained, in this region, as you mentioned by the use of iron oxide, practically painting the brick and, of course, when this coating flakes off the original salmon color of the burned clay appears. A process, that you do not mention, which I have tried on a small scale and which in several plants has proven a commercial success, might be of interest to the firm making the inquiry.

"In order to secure a product that will not revert to its old color, it is necessary to bring around a chemical action by increasing the percentage of iron compounds thruout the body of the product. This may be secured, in many cases, by adding directly to the clay a natural red burning shale or clay. In some cases it is only necessary to crush the shale, in other cases it may be necessary to pulverize. It is simply a matter of experiment. Perhaps by stating conditions as found in the Hudson Valley it may make my statement more clear. The mixture going to the machine (soft mud), in this region, consists of approximately one-third sand and two-thirds clay. This sand is low in iron compounds and high in silica. It actually reduces the amount of coloring matter in the finished product and is only used to reduce the natural stickiness of the clay and also to correct shrinkage in drying. It therefore has no value as a coloring agent. A few producers have substituted a shale for the sand and are securing a material that corrects he shrinkage, adds to the percentage of iron compounds and gives a wider range in burning.

Nearly every brick plant is equipped with a dry pan and herefore it will not be a hardship to try the experiment. A act well worth remembering is that all red shales do not burn red, that some light colored shales do burn red, that all black or blue clays do not secure their natural color from iron compounds and do not always burn red (I have seen a black clay burn almost white). In other words the natural color of he material gives very little information as to burning qualities. A simple set of experiments on the neighborhood rocks and clays may save a lot of money and time."

⁂

HARD BURNING BOTTOM BRICK

1,024, New York—We would appreciate any information you could give that would help us to do away with the following defects which we are experiencing in our burning.

We use the round, down-draft kilns, 30 feet in diameter, with

Dryer, Transfer and Clay Cars, with Flexible Bearings.
Switches, Turntables and Track.

THE CHASE FOUNDRY & MFG. CO.
COLUMBUS, OHIO

CHASE

You won't have to worry about competition if you treat your clay with

R. H. Precipitated Carbonate of Barytes

You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

The Roessler & Hasslacher Chemical Company

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Boston, Mass. New Orleans, La.
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Designed and Manufactured for
Hollow Ware, Fire-proofing Brick
and other purposes in dry or lubricating styles.

We Carry a Complete Line of

Piano Wire Screens
Hand Cutting Tables
Friction Winding Drums
Conveyors and Elevators

Located in the center of Ohio's clay territory, we are in a position to give you prompt and efficient service.

Write us now—address

Louisville Machine Manufacturing Co.
LOUISVILLE, OHIO

Efficient Clay Drying
Depends on
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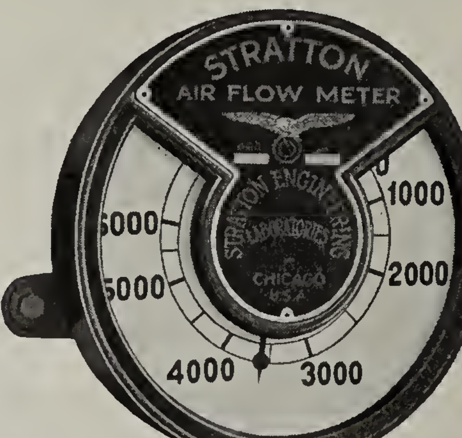
The STRATTON
AIR FLOW METER
Indicates Air Flow Constantly

WRITE FOR BULLETINS



STRATTON ENGINEERING LABORATORIES
NEW YORK
90 West Street
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431 S. Dearborn St.
Industrial Plant Efficiency Engineers

the Boss Burning System. Our stacks are 32 inches in diameter at the bottom and 30 inches in diameter at the top, and are 28 feet high from the bottom of the flue duct. The flues to the stack consist of a single cell, two feet in diameter, set in the center of the kiln floor and perforations set in a radius of 3½ feet from the center of the middle well. The flue duct is two feet wide and 28 inches high, inside dimensions.

We have set differenct kilns eight over three, 34 courses high; seven over three, 20 courses high, and five over two, 20 courses high. In each case, from two to four courses we set loosely in the bottom of the kiln. The bag walls ranged from three to six feet in height. In burning these kilns we used anthracite screenings mixed with gas slack, clear screenings and clear slack. We burned slowly, about ten days, and fast, about three days, with practically the same results.

Our clay burns to the proper vitrification at 2,000 to 2,025 deg. F., and it requires more than 1,900 deg. to start the brick shrinking at all. When a temperature of 2,000 deg. or more is reached we are unable to hold this temperature any great length of time lest the brick in the top of the kiln melt, and for this reason we have been unable to raise the temperature in the bottom of the kiln to exceed 1,800 deg. at any time. This results in soft brick in the bottom of the kiln, and it is this one thing which we are trying to get away from. In every kiln there is a marked and decided line of light-hard brick all the way across, varying with the height of the bag wall. This line is very pronounced about two feet below the top of the high bag wall and a few inches below the top of the low bag wall. In other words, this line of demarcation is always present in the same relative position to the top of the bag wall.

We know that we can burn our brick as fast as we can get the heat into them without doing any damage up to 2,000 deg.

We would like to have any information you can give us as to what we can do to obtain a well burned bottom. We want an all hard burned kiln of brick and are unable to get it.

We make a stiff mud, plastic clay brick which, when properly burned, makes a most excellent face brick and, with certain treatments, gives a wide range of beautiful colors.

This question was submitted to several authorities in the clay industries and their replies are published herewith.

"There are so many different things that might contribute towards this company's troubles that it is almost impossible to arrive at anything like a solution without complete setting and burning data. For instance, damp kiln bottoms due to poor drainage, ware set too loose on bottom, wet brick set in the kiln, or a too rapid rise in temperature during certain stages of the burn so that the top of the kiln gets too far ahead of the bottom.

"I have never had any experience with the system of burning mentioned but have seen kilns burned with it and the results were all that could be expected.

"If wet brick are set you must be sure all moisture is driven off before the temperature is raised above 350 deg. F., if this is not done the bottom will always lag behind the top.

"You state that from two to four courses are always set loose on the bottom, and perhaps you are setting the bottom too loose, which would permit the heat to get out of the kiln before the bottom courses have a chance to absorb it.

"I would suggest they try setting the top courses much tighter than the bottom as this will make it more difficult to over burn the top."

Following is another suggestion to eliminate the trouble experienced:

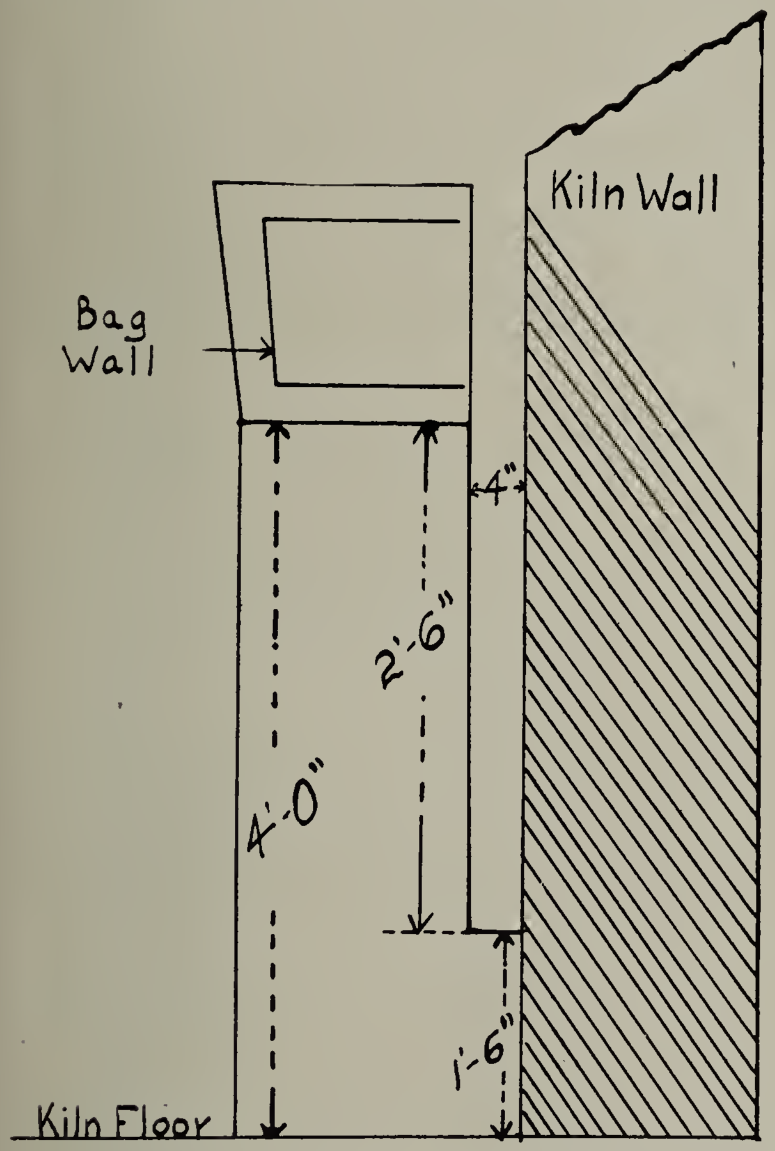
"Total area of discharge through bottom should be 1½ times the stack area. This equalizes distribution and to an extent prevents escape of heat from kiln bottom too fast. Insulation of crown tends to equalize kiln temperature. Dampering to slow draft tends to equalize temperature. All of the above according to my experience has helped in similar circumstances.

But a four foot bag wall with side outlets on each side four inches from kiln wall 2½ feet down (see sketch) is the best means I ever tried to get the fire down."

Other valuable suggestions are contained in the following letter:

"From the data furnished it seems that the soft brick are caused from an uneven heat balance or distribution in the kilns.

"There are three local conditions evident which need consideration in establishing a heat balance in your kilns.



Sketch of Four Foot Bag Wall with Side Outlets on Each Side Four Inches from the Kiln Wall.

"A. The clay has a narrow vitrification range in both time and temperature.

"B. The kiln bottoms may be classed as the solid bottom type (better adapted for burning clays with a wide vitrification range than a sensitive clay) requiring more time and temperature to bring the ware on the floor to its maturing heat, than the open bottom types thru which there is a circulation of hot gases at all times, in all portions of the kiln floor, that tends to give a more even temperature thruout the bottom and also assists in bringing the temperature line which separated the hard and soft brick to the floor level.

"C. The fuel used may have a tendency to produce a short flame (low in volatile matter) and local high temperatures in and near the furnaces, the heat being carried to the ware mostly by convection.

"Undoubtedly the heat may be well equalized by maintaining a balanced draft during the latter portions of the burn. After the finishing temperature has been reached in the upper portions of the setting it must be held and the same temperature worked to the lower portions of the kiln. This is best accomplished by maintaining a draft which is just sufficient to keep the furnaces cleared of their gases. Excess air may be admitted over the fires, which assists to drive the heat to the lower portions of the kiln. The damper requires careful attention and it may be necessary to raise it every two or three

Burn Your Ware With
PRODUCER GAS

Hand-Poked and Mechanical Producers, Rotary Dryers and Calciners are our specialty.

Expert engineering service is yours if you are contemplating burning with producer gas, or if your present system is not satisfactory.

We have been in this business thirty years.

We also manufacture stacks, tanks and other steel plate work.

Write us today

DUFF PATENTS COMPANY
INC.
Frick Building PITTSBURGH, PA.

Put This Trade Mark on Your Brick

"WELLINGTON"
MOLDS ARE BEST

Built of the best grade Maple, solidly riveted partitions, shoe made of special steel over entire top. Fully guaranteed. All styles and sizes to meet every requirement. We also manufacture a full line of brick machinery. Our catalog shows details of all equipment.

Ask us about molds.

The Wellington Machine Co.
Wellington, Ohio

hours, for 30 or 40 minutes and fire heavier than when the draft is sluggish.

"A draft gage and pyrometer will eliminate much guess work during the burn and especially in the finish period. By compiling accurate draft and temperature records for a few burns the source of trouble ought to be located and soon overcome.

"As you intimate no difficulty in generating enough heat in the furnaces, to burn the larger bulk of the ware, the grate area, flue areas and stack proportion, evidently are of sufficient size to meet their requirements for the ware manufactured, altho the stack is smaller in both area and height than the recommended size for a 30-foot kiln.

"In some cases the floor has pushed the bottom of the wall out, by expansion, so that the diameter at the floor level has increased a foot or more. This ruptures the walls and if the cracks are not properly attended to, admits much cold air into the lower portions of the setting which travels to the radial flues and tends to keep the bottom brick underburned."

The Letter Box

A Place Wherein Letters
That Have General Interest Are Published
and Commented Upon

BRADFORD STORY CONTAINS ERRORS

In the story of the Bradford (Pa.) Brick & Tile Co. in the December 27 issue of Brick and Clay Record, several errors were made. These have been called to our attention by D. B. Hendryx, assistant general manager of the plant, and we are glad to print his letter.

"There are several corrections in the articles concerning our plants which you published in your December 27 issue to which we desire to call your attention.

"On page 1001 of this article you state that 160,000 cu. ft. of natural gas was used in the Dressler kiln to burn 34,000 brick, whereas the real fuel consumption runs about 6,000 cu. ft. per thousand brick.

"On page 1009 the production of hollow tile given for our No. 1 plant is correct. The No. 2 plant has a capacity of about 3,000 tons of hollow tile or 1,200,000 wire cut brick, but does not have the capacity to manufacture the above quantity of tile and brick at the same time. The No. 3 plant which is the new factory just completed has a capacity of 1,000,000 brick per month with the present equipment or 2,000,000 brick after the second kiln and dryer has been installed.

"In the final paragraph of this description, the statement that one prospective customer offered us a bond guaranteeing the sale of brick in his city should be changed to read 1,500,000 brick per year instead of per month.

"We are calling your attention to this discrepancy because we do not wish to give a false impression of the size and efficiency of our plants."

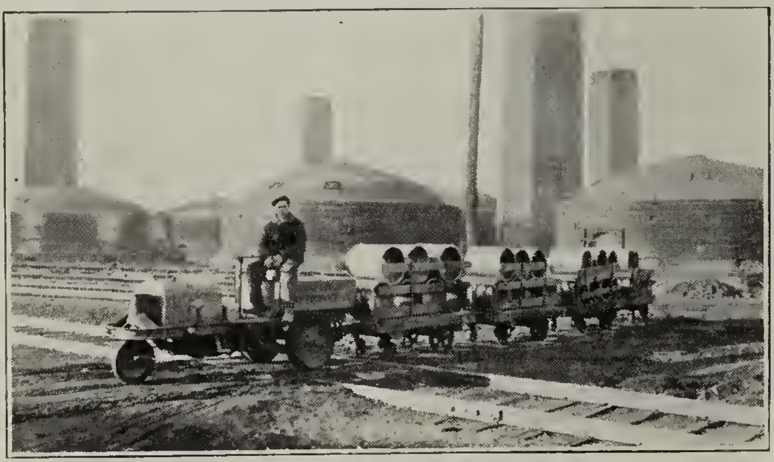
⁂

TWO BRICK vs. FOUR BRICK BENCH ARCH

Often the greatest value obtained from articles published in magazines is not the data given in the articles but the information gained from discussions which are brought out by them. The articles, however, are necessary to stimulate thought and awaken the ideas of those who offer discussions. These discussions are always very welcome as long as they are constructive and well meaning. Brick and Clay Record desires to encourage discussion, and would be glad indeed to give more space to such matters.

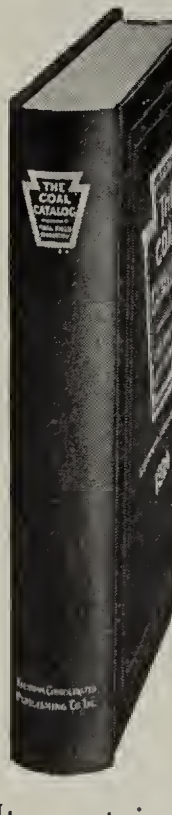
Below are published two letters which were prompted by an article which appeared in the December 27 issue of Brick and Clay Record. These letters discuss important subjects rela-

This Photo Tells
a Real Story



A Clark Tructractor doing the work of eight wheelbarrow men in a clay products plant.

CLARK TRUCTRACTOR CO.
1124 Days Ave., Buchanan, Mich.



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tive to up-draft kilns, and should be of interest to all plants using this type of kiln.

"In the December 27 issue of Brick and Clay Record, the writer read with interest an article by Elias Petts entitled, 'Setting A Wood-Fired Scove Kiln.' The author recommended four-brick benches and was not in favor of two- or three-brick benches. He also claimed that one should use the best method for his particular conditions. Moreover, he stated that brick setting and brick burning are very closely related.

"It is very important that one in charge of burning should know the relationship between brick setting and burning. The writer's experience in the clay products industry covers approximately 40 years, and he is recognized generally as an authority on matters pertaining to up- or down-draft kilns. My broad experience compels me to accept Mr. Petts' method for some particular conditions, but not as a standard for everyone in the brick trade. I would suggest various methods be shown from time to time in order to meet different conditions.

"I have been compelled to change from a four-brick bench arch to a two-brick bench arch, and have made a large saving in time and fuel, eliminating waste and increasing quality.

"Please pardon me for this lengthy letter, as I wish to make myself plain. I do not wish to condemn any method from which good results can be obtained. I believe that at this time we need the best thoughts in the trade from able men on matters pertaining to brick production.

"I will compare the methods of two- and four-brick benches. The four-brick bench as advocated by Mr. Petts is like this: With one brick bench at each end of the kiln and five four-brick benches between, size of green brick 8¼ inches in length, would take up space in kiln 181½ inches. Six fire openings 16 inches each would be equal to a space of 96 inches. Hence the entire length of kiln would be 277½ inches.

"The two-brick bench which I advocate is as follows: With one brick bench at each end of kiln and seven two-brick benches between, size of green brick 8¼ inches in length, would take up space in kiln equal to 132 inches. Eight fire openings 18 inches each would be equivalent to 144 inches. Thus the entire length of the kiln would be 276 inches.

"With a two-brick bench arch we have 44 inches more fire space than we have in a four-brick bench. If one has a clay that will stand without damage to the arch brick, it is not a question as to the number of brick set in the benches as it is to the number of good arch brick and quality after the kiln has been drawn.

"I will admit that with eight fire openings we have a larger number of brick exposed to the fire. We have only a small percentage of damaged brick, however, due largely to knowing the relationship of the setting and burning. Mr. Petts claims a two-brick bench is insufficient to carry the weight of the kiln. My arches stand up without any trouble with my two-brick bench method, and I also have found that when I set four-brick bench 16-inch fire openings that the two outside courses next to the side would shrink away from the two inside courses, and the overhanger would drop out, leaving the inside courses to retain the weight of the kiln. With the two-brick bench, the entire kiln would settle and the overhanger at all times would remain in place.

"Just a line or two with regard to methods of setting up-draft clamp scoved kilns. Down-draft kiln competition forces us to use a method as near as we can to arrange our kiln so that we may have control of our heat in firing up-draft kilns. I have two tight courses on top of the kiln with a joint broken, and on top of those courses two platting tight. In several parts of the kiln I lift out regular brick from the tight course for draft and close the openings when necessary, long before the kiln has finished firing. The top draft openings are all closed, permitting us to control the kiln by increasing or diminishing the draft at will."—George W. Cook, Syracuse, N. Y.

Mr. Petts replied as follows:

"I am glad to hear from Brother George W. Cook on the uestion of two vs. four-brick benches. If these articles create a friendly discussion, we may get some real information out of them.

"The four-brick bench seems to have touched a tender spot in Brother Cook's feelings, and he draws a deadly parallel between he four-brick bench advocated and his two-brick bench, but e fails to say how he sets his two-brick bench. Therefore, ve are not in a position to form a very clear idea of how he fire reaches the body of the kiln.

"Mr. Cook says I state that brick setting and brick burning re closely related. I will go farther than that and say that

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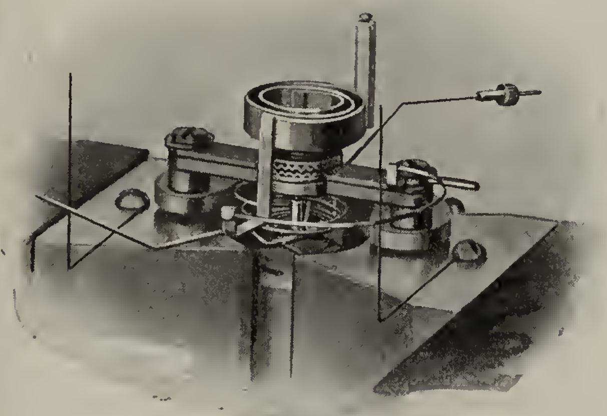

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brick setting is the first step in brick burning. I thought I had made this plain before.

"Brother Cook says he has 44 inches more fire space than the same kiln, with a four-brick bench, would have, but I see no escape for that fire except thru the overhangers, whereas the method shown of setting the four-brick bench gives as much fire space thru the middle brick benches as thru the overhangers, and herein lies the secret of the success of the four-brick bench.

"I too, have had the trouble of the overhangers dropping out, which Mr. Cook mentions, but in my case, and I fear in his case also it was due to the fact that the fire was cut off from the middle benches with the result that they heated too slowly and the fire bench settled first. I have never had this trouble where brick were set as shown in the article referred to.

"Brother Cook says that he has only a small percentage of damaged brick largely due to knowing the relationship between the setting and the burning. This sounds a little sarcastic, especially as this very relationship was emphasized in the article mentioned.

"In regard to the two-brick bench not being sufficient to sustain the weight of the kiln, I do not mean to say it will not, but I do say that there are a great many brick being made where the two-brick bench would not sustain the weight, and then there are others where the two-brick bench would stand, but if you can use a four-brick bench successfully, why burn two-brick bench?

"I have no criticism to offer on Brother Cook's method. He says he has had 40 years' experience, and he should have worked out the very best method for his particular clay, both as to setting and burning of the brick."

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

CAPTAIN JOHN PORTER DIES

Captain John Porter, 83 years old, pioneer paving brick manufacturer and former river man, died at his home in Kenilworth, W. Va., February 7, following a two weeks' illness.

Mr. Porter, who was president of the Globe Brick Co., manufactured the first paving brick in the United States. Prior to establishing a brick plant at New Cumberland, W. Va., he operated a packet line on the Ohio river.

He served two terms in the West Virginia legislature and one term as sheriff of Hancock County, West Virginia. He leaves his widow, one daughter and four sons, one of whom is State Senator J. N. Porter of Kenilworth.

* * *

R. J. PAFFORD SUCCEEDS F. C. HADDON, DECEASED

F. C. Haddon, former secretary and manager of the Salina (Kan.) Brick & Tile Co., died January 3 of pneumonia. Mr. Haddon served in the capacity of secretary and general manager since 1907. When he became manager, the plant was considered practically worthless, and he has been the means of making it a modern plant in every respect. A continuous kiln, electric power, a steam shovel, have been installed, and everything done to make a modern brick plant.

At the meeting of the stockholders on January 24, R. J. Pafford was selected to take the place of Mr. Haddon as secretary and general manager. Mr. Pafford has been with the company since 1909, and hence is not a new man in the business.

DEATH TAKES J. M. WARING

J. Madison Waring, 80 years old, president of the Western Brick Co. at Danville, Ill., died January 30, at his home in Muncie, Ind., following a brief illness of heart disease.

Mr. Waring was born at Antioch, Ohio, and had lived in Muncie for 35 years. He served as Captain of Infantry in the Civil War. A widow, two sisters and a number of nieces and nephews survive him.

Mr. Waring began his business career early in life and at various times was interested in more than a score of factories and banks in the middle west.

A. J. EARLE LEAVES OHIO HYDRATE

A. J. Earle, formerly of the Ohio Hydrate Co., has accepted the position as sales manager with the Independent Brick & Tile Co., Cleveland, Ohio.

W. CROW FORMS SERVICE COMPANY

Walter Crow, formerly with the American Clay Machinery Co., and who has a wide acquaintance in various manufacturing and engineering lines, has organized a company known as Walter Crow, Inc., with general offices at 327 South La Salle Street, Chicago. The aim of this company is to give expert advice on problems of construction, operation and business, in a combination of engineering and business service. Mr. Crow is well known to the clay industry, being a member of the American Ceramic Society, and was also formerly connected with the Shaffer Engineering & Equipment Co.

MISS SALMEN HAS SPLENDID WEDDING

The wedding of Miss Ella Rose Salmen, daughter of Mr. and Mrs. Fritz Salmen, pioneer brick and lumber manufacturer in Louisiana, to Colonel William H. Sullivan, mayor of Bogalusa, has been announced. This affair was one of the most splendid of its kind in the South. At least 4,000 persons were present, it is said, coming from all the neighboring towns around Slidell, the home of the bride. Slidell turned out in full force for the event, and the entire personnel of the Salmen interests were on hand to honor Miss Salmen. The New Orleans Times-Picayune described the affair as "the record nuptial event of the South."

WILL DOUBLE PRESENT CAPACITY

The Grande Brick Co. of Grand Rapids, Mich., will double its output in 1922 by the installation of additional equipment and machinery. This concern had a very successful season, closing the year entirely sold up, and is continuing production thru the winter. The officers of the company are president, John L. Jackson, Saginaw; vice-president, Charles W. Garfield, and secretary-manager, Henry Joseph.

NEW ALABAMA PLANT PLANNED

While no definite announcement regarding the project has as yet been made, it is stated by the Chamber of Commerce of Tuscaloosa, Ala., that a prominent brick manufacturer of Cleveland, Ohio, is considering the establishment of a large brick making plant in Tuscaloosa this year. Tests of the soil in that vicinity are being made, and six different deposits of clay and shale have been analyzed by chemists to determine its quality and suitability for brick manufacturing. There are large deposits of this clay and shale in that section of Alabama, providing an almost inexhaustible source of raw material if the quality measures up to the proper standards. If good ware can be manufactured cheaply it is more than likely that a plant will be erected there.

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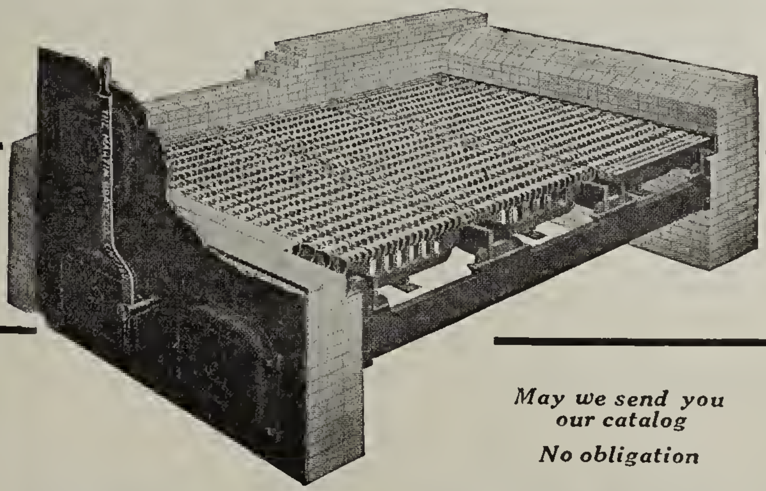
The wisest Brick manufacturers are investigating conditions in their boiler rooms, especially now that conditions demand the reduction of costs.

Martin Grates are adjustable for all sizes of coal, without the purchase of new parts; are "fool-proof" also. Read what Mr. J. M. Adams, Gen. Mgr. of the Ironclay Brick Co., Columbus, Ohio, has to say about his Martin Grates.

"We beg to say that we have been using these grates for from twelve to thirteen years and they have given very excellent service. They are not only long lived, but in every day use they give absolutely no trouble."



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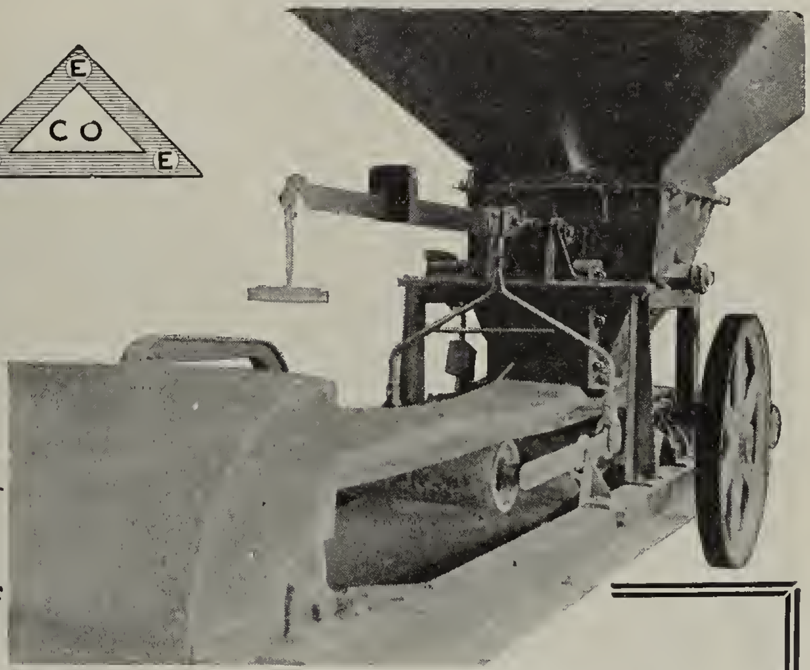

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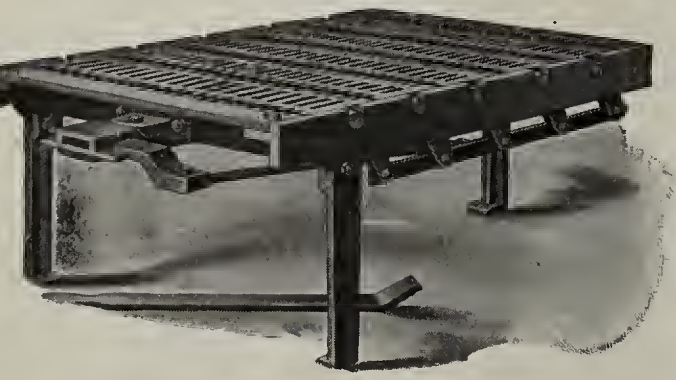

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SOUTHERN PLANT BUSY

The Southern Sewer Pipe Works is one of the busiest clay working plants of the Birmingham, Ala., section of the south. This plant has gone right along operating full time with practically a full force of employes when other plants of this section have been closed down. It is one of the biggest plants of the kind in the south.

A ready market is being found for the products of this plant. At this time many cars of sewer pipes are being shipped almost daily to various southern states, the plant covering practically the entire southern trade.

⁂

The Clark Pressed Brick Co., of Little Rock, Ark., has surrendered its charter, according to a report.

SHOWS MOVIE OF BUILDING EXHIBIT

The Livermore Fire Brick Works, San Francisco, Cal., is exhibiting a motion picture film at the Stockton Architectural and Building Exhibit, which was held at Stockton, Cal., from January 21 to January 28, showing the manufacture of face brick from the raw material to the finished product. Mr. Dickey is of the opinion that the film has brought good results, as a great deal of interest was shown in the Building Exhibit.

STARTS YEAR AUSPICIOUSLY

M. E. Corrigan of the Stockton (Cal.) Fire Brick Works reports a very good business. January was one of the best months the company has had for some time mainly because people have been holding off until after the first of the new year. This is partly due to the inventory time and partly due to the gradual improvement of business conditions all over the country. He says the outlook is very good for the near future.

ROOFING TILE POPULAR IN LOS ANGELES

As a result of the increased building operations in 1921 in Los Angeles, the greatest advance in production of the clay products industry was made during that period, according to the Los Angeles Pressed Brick Co. This industry is now one of the most important in southern California—and expects a year of great activity during 1922. Large increases were apparent in the demand for face brick and hollow tile, and more than 4,000,000 roofing tile, nearly all manufactured by the Los Angeles Pressed Brick Co., were made in that city in the past year.

The growing popularity of colored tile is due to the construction of so many residences in the locality along the style of Spanish architecture. Ceramic experts are now employed to perfect the texture and colorings of this tile, as well as terra cotta and roofing tile.

TO GO AHEAD WITH SEWER WORK

Extensive sewer work is projected by the city of Hartford, Conn., for next summer to supply employment for many now idle on account of the industrial depression. Charles E. Hubbard, Front St., Hartford, Conn., is making plans to stock extensively on sewer pipe.

HARTFORD BRICK SELL FOR $14.50

Michael Kane, of Hartford, Conn., reports production of 4,500,000 brick during the last year. A fair stock is held on hand to meet spring demands. "Everybody is expecting and hoping for a good year," said Mr. Kane. The prevailing price is $14.50 at the yard for common brick, or $16 a thousand delivered in Hartford. Those prices have held for the past three months and no further reductions are expected. The price is $8 less than a year ago.

BRICK HOUSE 182 YEARS OLD

When our forefathers built they built for permanency, which may be observed by viewing historic places thruout New England and in other localities where early settlement took place.

The R. O. Clark & Son Brick Co., East Berlin, Conn., has just acquired new clay pit property in Cromwell, which is also the site of one of the oldest houses in central Connecticut.

The house is known to have been in existence since 1738, when it was "Deeded this 17th day of January in the eleventh year of the Reign of our Sovereign Lord, George the 2nd A. D. 1738."

One of the Oldest Houses in Central Connecticut, 182 Years Old.

It is a large two story building and has six fireplaces, four on the ground floor and two upstairs. The brick used are somewhat smaller than the brick manufactured today and are of very excellent quality. They were made, according to tradition, from clay from the pit now being utilized in brick manufacturing. The house has a small hallway and a winding stairway leading to the upper part. The original floors with boards, some of them 20 to 24 inches in width, and the wainscoting of extremely wide boards, show the original saw marks.

ORGANIZE COMPANY IN WASHINGTON

The National Brick Co., Washington, D. C., has been organized with a capital of $75,000, to manufacture common brick. An existing plant in the vicinity of Washington will be operated by the new company. The incorporators are Alan S. Wolfe and Clyde C. Daley, 1130 Jefferson Street, Washington.

FIRE CAUSES $25,000 DAMAGE

A loss estimated at approximately $25,000 was caused the early part of this month when fire destroyed the main mechanical plant of the Electric City Brick Co., at Augusta, Ga. Machinery in the plant was badly damaged.

GEORGIA PLANT CHANGES HANDS

The Alto Brick Co., West Rome, Ga., has been acquired by northern capitalists who have changed the name to Romega Clay Products Co. C. A. Stone, president and general manager, declares that the plant will be running in about 60 days, manufacturing brick and varied clay products. Hollow tile made from shale found in Floyd and Chattooga Counties will probably be turned out.

MAY BUILD PLANT AT WINSTON-SALEM

A New York concern is negotiating with George D. Hodgin, of Winston-Salem, N. C., for the purpose of constructing a large clay plant on his property near Daisy, on the Walkertown road. D. M. Moody, of the North Carolina Geological

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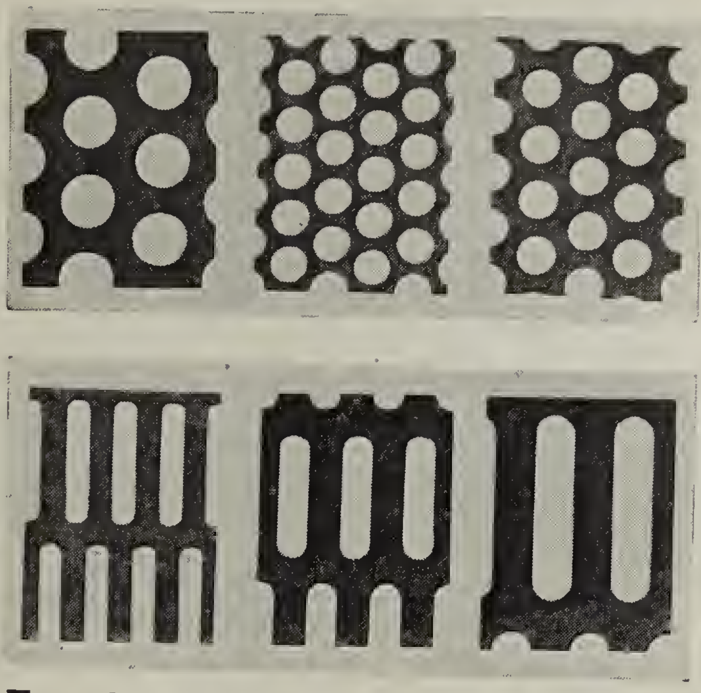

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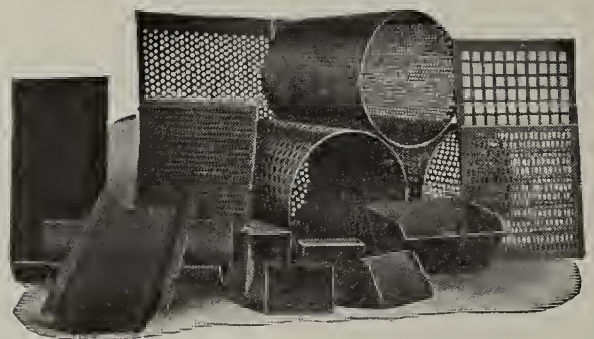

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Society, has investigated the deposits of shale and clay on the property, and reported the fire clay to be the best he had ever seen in the state. One of the best clay experts in the United States, who was consulted by Mr. Moody, also expressed the opinion that possibilities were unlimited for the development of this fire clay. Mr. Hodgin has stated that if a plant is established, he proposes to manufacture brick, hollow tile and tile flue lining.

HOOD SLASHES BRICK PRICES

In order to provide employment for a large number of the workers at its various plants the B. Mifflin Hood Brick Co., of Atlanta, announced recently thru President Hood a slashing reduction in the prices of brick of all kinds, and of the building materials the company handles. The reductions were announced in line with an agreement entered into by the workers at the plants, who voluntarily asked for lower wages in order that prices could therefore be reduced and business sufficiently stimulated to insure the starting up again of all the plants at capacity. The action has served to definitely solve the unemployment problem for the B. Mifflin Hood Co., and workers at four of the clay working plants that have been idle for some time, are now back at their posts as a result.

INCORPORATE CONCERN IN IDAHO

The Idaho Clays, Inc., recently filed articles of incorporation with the county auditor at Coeur d'Alene, Idaho. The company is capitalized at $500,000 and will manufacture sewer pipe, brick, pottery, terra cotta and other clay products. Laurence A. Spear and William M. Colby, both of Spokane, Wash., and William B. McFarland of Coeur d'Alene are the incorporators.

TRI-CITY CHANGES ENTIRE PERSONNEL

The Tri-City Brick Co. of Rock Island, Ill., with a factory at Carbon Cliff, Ill., has recently made an entire change in the personnel of the organization. Frank K. Rhoads of Rock Island has been elected president; Carl J. Mueller, Rock Island, vice-president; Joseph L. Buckley, Rock Island, secretary, and C. A. Beers, president of the First Trust and Savings Bank, treasurer. Other directors of the company are H. O. Binyon, treasurer of the S. S. Kimbell Brick Co., Chicago; Fred T. Myers, Rock Island and C. F. Drury, Davenport. In addition to these officers, J. L. Buckley is general manager and C. F. Drury sales manager.

All stock of the Tri-City Brick Co., which was organized to purchase the Argillo Works of Carbon Cliff, has been sold. This includes 1,200 shares of common stock of no par value and 600 shares of preferred stock of $100 par value. It is hoped that operations will be begun March 1.

The capacity of the plant will be enlarged and new machinery will be installed and new kilns built. Instead of drain tile the company will manufacture face brick, hollow brick and hollow building blocks. After all improvements have been made it is expected that capacity production will be from 15 to 20 million brick per year—about 50,000 a day.

TO DEVELOP FULLER'S EARTH DEPOSITS

The large deposits of fuller's earth at Olmstead, Ill., have come into prominence thru the purchasing of 155 acres of land in that section by the Standard Oil Co. of Indiana. Discovery of this deposit dates back to about 1912, when H. J. Gardner, at that time connected with the Kentucky Geological Survey, visited the bluffs on the Illinois side of the Ohio River during the course of his professional studies. Following the discovery, the Illinois Fuller's Earth Co. was organized, a mill was erected and the prepared earth was marketed. The plant at present in operation, at what is known as Caledonia Landing, which is the name given the river front at Olmstead, has a capacity of about 350 tons per month. Since the incorporation of the Illinois Fuller's Earth Co., the Sinclair Refining Co. of Chicago, has taken over the mill and 55 acres of land. It is now reported that the Standard Oil Co. is to erect a plant of about the same capacity.

The total amount of fuller's earth available has been estimated at 4,000,000 tons. The central location of this deposit, with reference to the mineral and vegetable oil refineries, its easy accessibility by water and rail, and the great quantity of raw material, will make Illinois one of the important producers.—*C. W. Parmelee in Chemical and Metallurgical Engineering.*

PLANS BUILDING TWO KILNS

Samuel Anderson & Sons, Taylorville, Ill., recently installed a clay digger which greatly facilitates the winning of their raw material. The company is planning to build a 32-foot round down-draft kiln, and will add six sections to the Haigh kiln which is now being operated.

PASSES THRU POOR YEAR

Business was poor during 1921 for the Chicago Retort & Fire Brick Co. at Ottawa, Ill., but is reported fair at present. Less men are employed now than one year ago. This plant installed $15,000 worth of new machinery and equipment in the past year.

PLANNING BUILDING NEW PLANT

The Carbon Fire Brick & Coal Co., 345 Lemcke Annex Building, Indianapolis, Ind., is considering plans for the erection of a new plant at Carbon, Ind., to consist of a number of one-story buildings, estimated to cost about $150,000, including equipment. The company has an established works in this district. E. E. Dean is president.

CLOSE PLANT FOR REPAIRS

The No. 1 plant of the Clay Products Co., located south of Brazil, Ind., closed down in January for five or six weeks, to make repairs. The company has been running with a partial force for several months because of a slow demand, and it was decided to close the plant for repairs while business is slack.

STARTS CAPACITY PRODUCTION

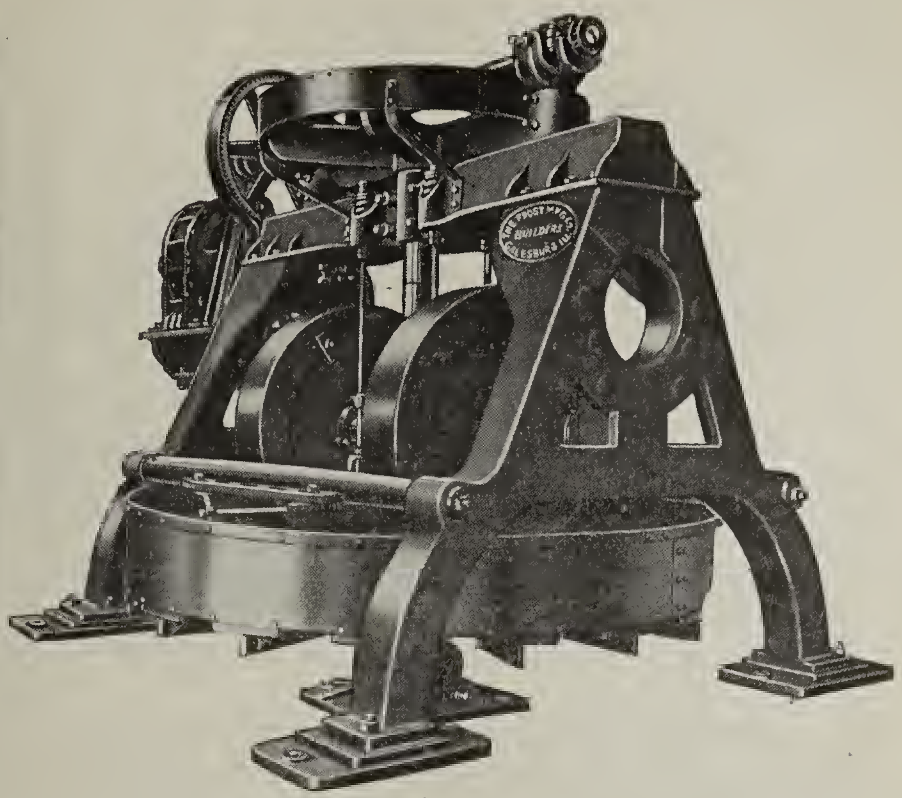
The Crawfordsville (Ind.) Shale Brick Co., following a period during which it was closed due to the industrial depression, has reopened and is operating under full schedule During the enforced period of idleness, many of the buildings at the plant near here were rebuilt of brick produced by the corporation. G. B. Luckett, of the company, has announced that the plant will be operated by a full force for an indefinite period, orders on hand being sufficient to assure its operation for some time.

TO BUILD $200,000 PLANT

A $200,000 brick and tile plant is to be erected by the Bloomington Brick & Tile Co., on its holdings of 239 acres of land ten miles northeast of Bloomington, Ind., on the Illinois Central Railroad near Unionville. Prominent stockholders include Prof. U. S. Hanna, of the mathematics department of Indiana University; Thomas J. Sare, Louis W. Hughes and Charles H. Springer. The company will manufacture the Denison load-bearing tile.

INDIANAPOLIS MEN SEE PRICE GAINS

Brick dealers and manufacturers' representatives of Indianapolis, Ind., report a broadening demand for this product with



DO YOU KNOW?

That Frost Pans aim to give you the best quality
of material, workmanship and fabrication
that can be obtained.

SEND US YOUR INQUIRIES

THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851

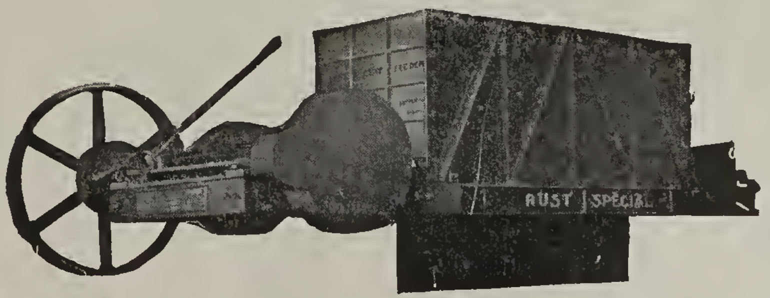
To Reduce Production Costs In Your Own Plant

The mere statement that Marion "Rust Special" Feeder-Mixers are satisfactorily used by others will not do your plant any good.

But, just as soon as you install a Marion and let it work for you in your plant, you will receive dividends in the shape of lower labor costs and better ware.

Now is the best time to start using the Marion, because 1922 is the year that every clay products manufacturer must reduce his costs.

Write for our latest catalog. It contains complete information on all Marion Equipment for clay plants



Marion Machine Foundry & Supply Co.
Box 395 Marion, Indiana

Why an Appraisal?

It will give you a safe, economical basis for placing your insurance, and a provable record for adjusting losses.

It will satisfy the demands of bankers, stockholders, or investors for authoritative and disinterested statements of plant values.

It will provide properly prepared data on invested capital, depreciation, and depletion for federal tax and accounting purposes.

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Seattle
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Tulsa
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Robinson's Kiln Bands

Make the Kilns Last Longer and then Outlast the Kilns

That the periodic heating up and cooling down of a kiln is primarily responsible for the bulging and cracking of the kiln walls, no one will likely dispute.

AND

That Robinson's Kiln Bands will eliminate all chances of this loss is well proven by the fact that thousands of satisfied users will testify as to their value.

Write us for our latest catalog on all Robinson Equipment for Clay Plants. No obligation.

FRANK H. ROBINSON
Dryer Cars and Clay Working Equipment
Factory and General Office, Pittsburgh, Pa.

bright prospects for 1922. General indications point to higher prices for brick, altho there are two factors that will tend to influence the market to slightly lower levels. These two factors are lower wage scales and lower freight rates. But if building operations are increased the present output of factories will be taxed, advancing prices. In the opinion of the dealers, the latter will be the case.

One dealer reports that more brick was sold for residential construction last year than any year since 1900, and even larger sales are expected this year. From 25 to 30 per cent. reduction was made in the price of brick during 1921, and present prices are too low in comparison with other building materials. Keen competition in the trade, however, prevents any great price advance.

BUILDING NEW DRYER AND KILNS

Altho operating but eight months at the present time the Roberts Clay Co., Clay City, Ind., will soon be equipped to run the entire year, when the new dryer and the two new kilns the company is now building are completed. B. F. Roberts states that the new dryer will be the very latest thing in steam dryer design. This company has substituted revolving clay screens for the old style piano wire screen, and claim that the quality of the ware has been improved 50 per cent.

EXHIBIT AT HARDWARE MEETING

The Cannelton (Ind.) Sewer Pipe Co. and the Louisville (Ky.) Pottery Co., were the two clay products organizations to exhibit at the annual meeting of the Kentucky Hardware & Implement Association held at the Jefferson County Armory recently, there being about 90 exhibitors at the four day convention. Hardware dealers reported very fair prospects, but the implement men cannot see much in sight, as farmers have no money and are having a hard time to meet obligations.

HIGH FREIGHT RATES RETARD SALES

The high freight rates on coal and on finished products is causing the dull condition in the clay industry in Northern Iowa, according to a report from the National Clay Works of Mason City. Their business is rather poor at present.

This company has recently installed two steam shovels which they use for loading the clay into cars at the pit and also for unloading coal.

IOWA CONCERN WILL ADVERTISE

The Clayton (Ia.) Brick & Tile Co. has practically completed the erection of its buildings and the installation of equipment, and operation will be commenced as soon as the weather permits. The stockholders of this concern, at their annual meeting held in January, decided to properly advertise its brick and tile so that builders will be in a position to make comparisons with competitive products. White, dark red and buff brick will be turned out, as well as sewer pipe, culverts, roof and floor tile. A new board of directors was elected for the ensuing year, composed of the following: Henry Michel W. H. Meuser, Richard Kolck, Jr., Fred Henker and J. W. Hudek.

COMMUNITY FARM TILING

The Board of Supervisors of Chickasaw County, Ia., have before them something new in the form of a first drainage petition for the right to drain a series of adjoining farms in the county.

The county has a number of farmers who realize the value of drainage and have tiled their farms and secured excellent results in return. As a result of this F. L. Wacholz has petitioned the Board of Supervisors for right to drain his own and adjoining farms. It is a step in advance of the individual plan the Chickasaw county farmers who are interested in the proposition believe. When individuals see the result of combined drainage they will organize groups to carry out similar projects. Other Iowa counties have found it adds materially to their land value. It is pointed out that Chickasaw County lands have not been bringing as high a price as some in the drained part of the state.

HAS CONFIDENCE IN SPRING BUILDING

Confidence in the opening of the building situation in spring has caused the Lawrence (Kan.) Brick & Tile Co. to continue running at half capacity. The majority of the material now being manufactured is going into stock. This company has recently installed an oil burning equipment on the kilns and boiler room.

⁂

The Peru (Kan.) brick plant commenced to make brick Tuesday, January 17.

KANSAS FIGHTING HIGH RATES

Kansas clay products manufacturers are making an effort to secure a lower freight rate, and the railroad companies have looked with favor on a reduction amounting to about ten per cent. on short hauls, but have not vouchsafed any relief on long hauls except in very few instances. Nothing has been definitely decided, however, since all these changes in rates must be ratified by the Interstate Commerce Commission. Not all the railroads have definitely agreed to make these concessions.

FORM $25,000 BRICK COMPANY

The L. J. Bolster Co., a $25,000 corporation, has been formed at Louisville, Ky., to deal in brick, sand, gravel, cement, structural iron and other products. The officials of the company are L. J. Bolster, R. L. Duncan, H. L. Hansberry and R. H. Pybas.

THE INTERESTING STUDY OF BRICK

Thomas Taylor of the Corbin Brick Co., of Woodbine, Ky., has sent us the following:

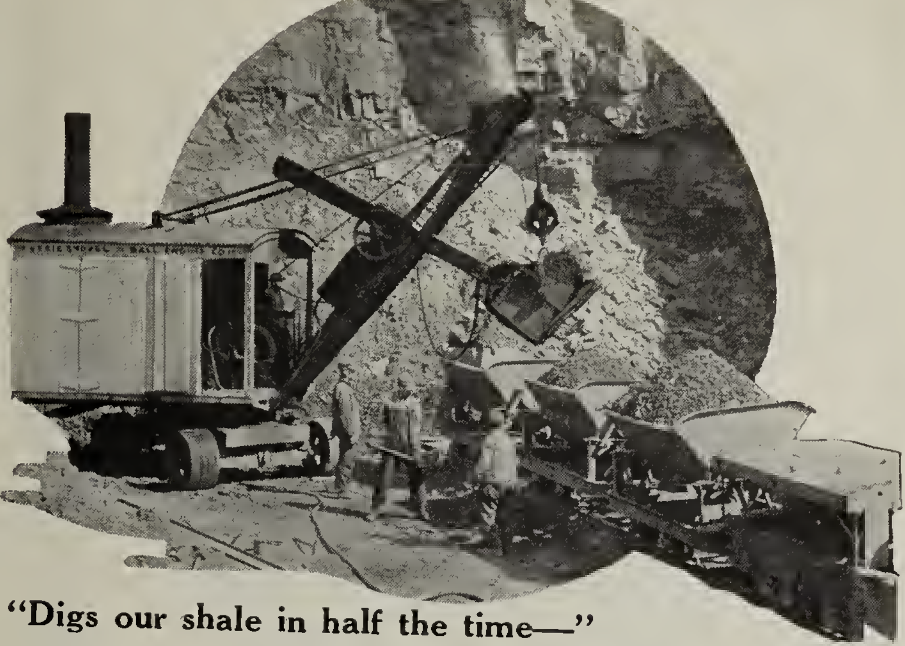
"Recently the writer saw a geologist in a brick yard with his hammer studying the broken pieces of brick, it seemed, just as he would have studied the strata and formation of a piece of stone; and as we looked at him and remembered the long and interesting history of brick, we wondered if it could not become quite as interesting as the study of geology."

MAKE FIRE BRICK FOR NAVY

The Louisville Fire Brick Works has announced that it has secured the fire brick contract for one year for all requirements of the U. S. Navy, and has already shipped about 20 cars of fire brick, principally to the Pacific Coast navy yards. This company had the old contract for a period of five years, but in 1921 the Ashland (Ky.) Fire Brick Works secured the contract and kept it for one year. The Louisville company got it back in December, and with this business added to its commercial and industrial business, is operating both plants four days a week at this time.

MAKE BRICK OF COAL CINDERS

A number of Massachusetts brick dealers are exhibiting samples of brick made of cinders which have been received from New York. Accompanying the samples is a memorandum which calls attention to the fact that these cinder brick are being used in the construction of a $100,000 residence which is now under construction in that city. The brick are the invention of Frank Cordery of New York City. They are made



"Digs our shale in half the time—"

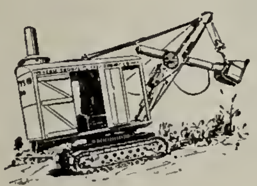
writes *Emmett Poston, Mgr.; Poston Brick Co., Springfield, Ill.*

"With 5 men, the ERIE gives us plenty of shale to keep our plant running full capacity, and does a day's work of 11 men in 5 hours. And it has reduced our dynamite costs 90%. The ERIE has certainly proven a sound investment for tough shale digging."

Savings like these will increase your profits—and the ERIE's steady reliability will assure you raw material whenever needed. The ERIE is built much stronger than other shovels of its size. Upkeep expense is negligible.

We would like to send you a bulletin full of facts and photos, showing just what the ERIE can do in getting out your clay and shale. Write for Bulletin B-16.

BALL ENGINE CO., Erie, Pa., U. S. A.
Builders of ERIE Steam Shovels and Loco. Cranes



ERIE Shovels can be had with broad tired traction wheels, standard gauge car wheels, or on the ERIE caterpillar type mounting. All interchangeable on the same truck frame.

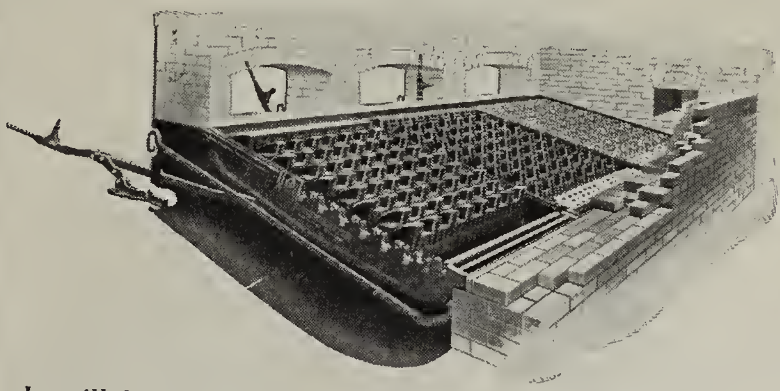
ERIE Revolving Shovels

BALL Engine Co. Erie, Pa.

You Can Save Labor and Fuel by Installing

COKAL HAND STOKERS

These Stokers have made unbounded success in the clay products industry. They are simple, durable and efficient. They enable your firemen to hold even fires. They eliminate the horrors of cleaning—one throw of the lever does the job which heretofore used to take hours of hard labor.



It will be well worth your while to investigate the CoKal.

Write today.

COKAL STOKER CORPORATION
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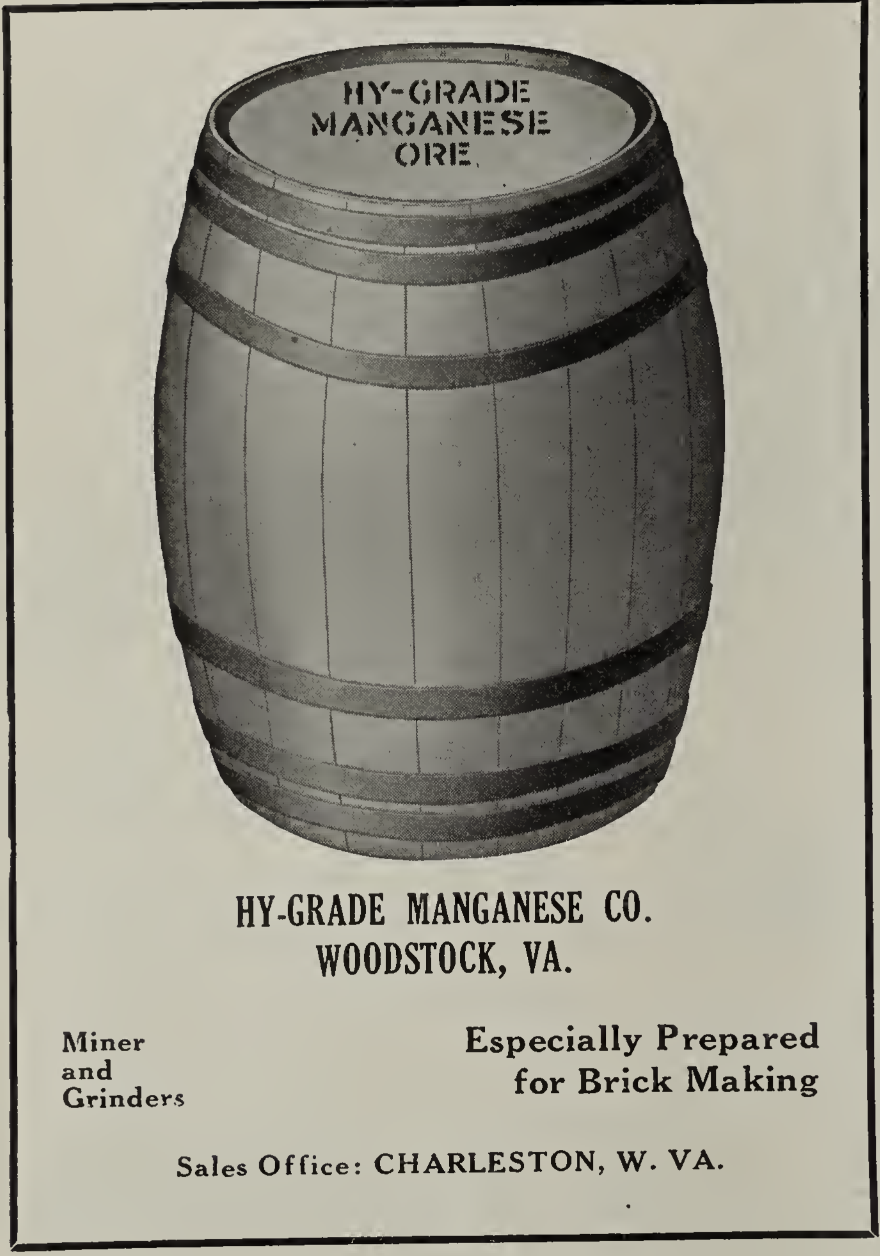
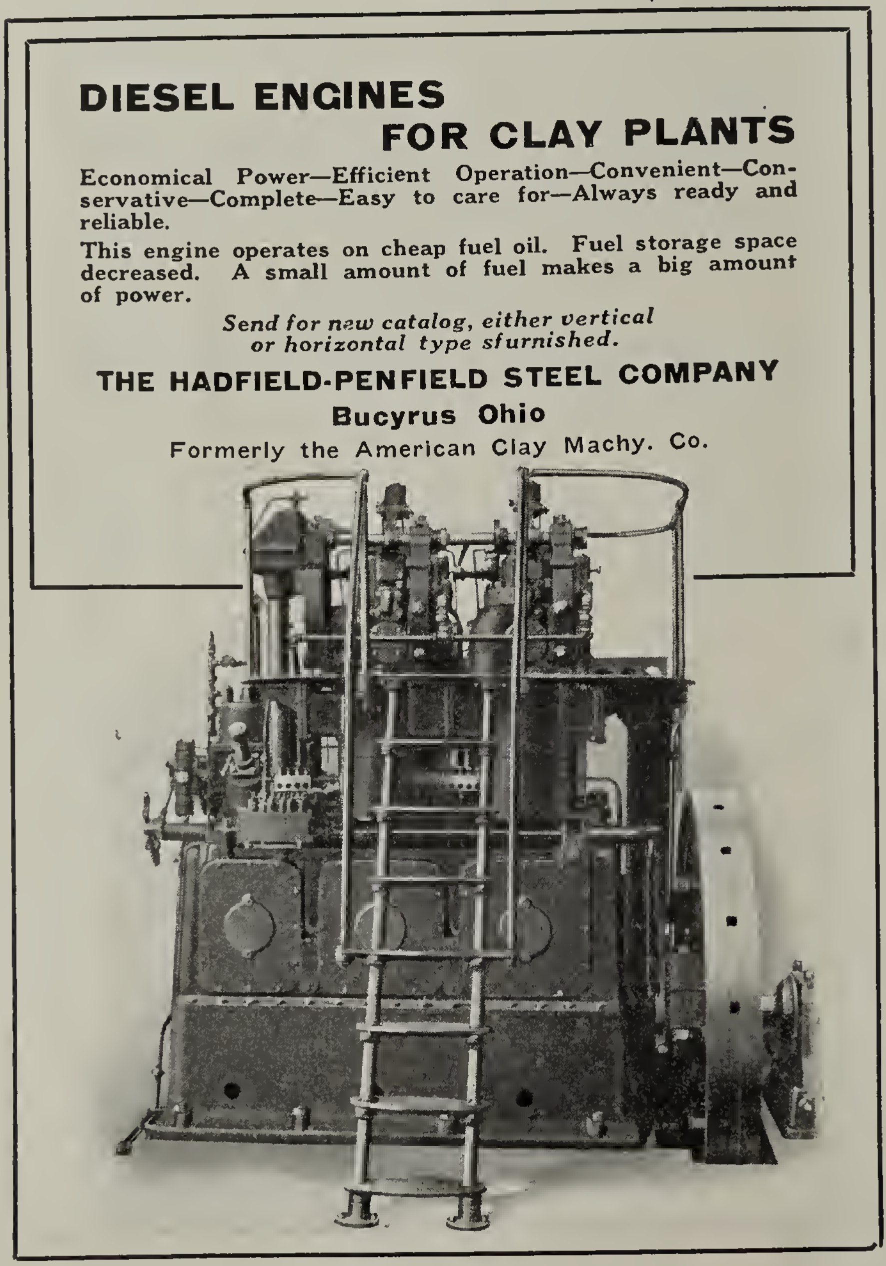


HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner and Grinders

Especially Prepared for Brick Making

Sales Office: CHARLESTON, W. VA.


DIESEL ENGINES FOR CLAY PLANTS

Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal type sfurnished.

THE HADFIELD-PENFIELD STEEL COMPANY
Bucyrus Ohio
Formerly the American Clay Machy. Co.

from ordinary coal cinders and chemicals and are said to be from 30 to 35 per cent. cheaper than ordinary tile. They are claimed to be non-conductors of heat and are ready for use 24 hours after being placed in the molds.

DETROIT BRICK MEN ADVERTISE

Local buying is being encouraged by the Detroit Brick Manufacturers' and Dealers' Association, who are taking an active part in the "Buy in Detroit" movement which concerns in that city are pushing. Reasons purported to be "as sound and as good as the brick themselves" are advanced by the association why Detroit brick should be specified for all building in their locality. They are:

First—They are made in Detroit by Detroit citizens.

Second—Making of Detroit brick entails payment of good wages to the same Detroiters and spending of hundreds of thousands of dollars in the city.

Third—The vast amount of capital invested in this industry helps Detroiters directly and indirectly.

Fourth—Detroit made brick are economical and lend themselves admirably to any architectural detail where beauty, utility, economy and effectiveness are desired.

WORKING AT FULL SPEED

The Ionia Pottery Co. of Grand Rapids, Mich., is running full force in expectation of spring demand for its flower pots.

1921 SHOWS GOOD PROFITS

According to J. T. Menefee, manager of the Brunswick (Mo.) Brick & Tile Co., that plant has made considerable money during the past year. At the annual stockholders meeting held in January, Mr. Menefee told the members present that the outlook for 1922 is very bright, and he hopes to double the amount of business done in 1921. Dr. C. W. Bowen, president; John Myers, Jr., vice-president, and T. F. Fulkerson, secretary-treasurer, were the officers elected for the ensuing year.

MISSOURI PLANT TO BUILD MORE KILNS

The installation of conveyors in the new ground shale storage bin recently erected by the Harrisonville Brick & Tile Co., Kansas City, Mo., will be completed shortly. The plant at Harrisonville, Mo., consists of two large Hoffmann continuous kilns and four round down-draft kilns. The company hopes to build two more round down-draft kilns this spring, and these additions will complete that unit. Operations during 1921 at the Harrisonville plant were maintained at the rate of about 67 per cent.

MAY CLOSE ROAD ON CLAY PLANTS

The business interests of Poplar Bluff, Mo., are much perturbed over the intimation of Division Engineer Murray of the Poplar Bluff district that he will issue an order discontinuing the transportation of clay products from the mines north of that city to Poplar Bluff over the St. Louis road. The china clay business of Poplar Bluff is one of the largest in the city, and the order of the kind outlined would virtually mean that the mines would have to be abandoned. The clay industry has been continued here while other industries were shut down and recently the operators voluntarily raised the wages of the men, which has meant much to the business interests of Poplar Bluff. The clay interests employ many men with teams. According to information received here the order is contemplated because the clay wagons are cutting the road to an alarming degree. It is said that the surfacing of this road is not heavy enough to carry the traffic, being of C grade. The opinion is expressed here that an order can be issued to limit the loads hauled by the clay wagons but that an order to close the road to traffic altogether would be illegal, as it would be held as a discriminatory order by the courts.

STATE PLANT REPORTS GOOD OUTPUT

The brick plant of the Santa Fe (N. M.) penitentiary last year turned out more than 2,000,000 building brick, besides building and drain tile. 1,500,000 brick were sold. A cut of two dollars per thousand for soft red brick, and proportionate reductions in the price of vitrified brick and tile, went into effect February 1.

FORECLOSURE SALE OF N. Y. PLANT

The Matthew Hayden brick works, located in New Windsor, N. Y., has been sold at foreclosure of chattel mortgage sale to James Lahey, William A. Lahey and Charles Gegenheimer, the mortgagees, a report states. The property includes a complete operating plant and two million brick ready for shipment.

EXPECTS CAPACITY DEMAND IN 1922

F. F. Steele, manager of the Statesville (N. C.) Brick Co., reports conditions and prospects in the brick business very good as far as demand is concerned, tho price is too low for the present cost of production. This concern ships over a million brick per month, and expects a heavier call for face and common brick than it will be able to supply for 1922.

FINDS VEIN OF CLAY OVER COAL

A 30-foot vein of clay has been discovered about 10 or 12 feet below the surface of land belonging to the Pittsburgh Coal Mining Co., at Dickinson, N. D. This company plans to have an engineering concern lay out its mining property in advance, and is considering the possibility of a future brick plant to operate in connection with the coal mine which will be opened as soon as weather permits.

TO BEGIN WORK MARCH 1

The Kenton (Ohio) Brick & Tile Co. has installed new machinery and will start operations about March 1. The newly elected officers of the company are: president, John Jordan; vice-president, Edward Schindewolf.

FIRE BRICK PLANT RESUMES

The National Fire Brick Co., New Philadelphia, Ohio, has resumed operations at its plant, following a shut down for a number of weeks past. A four-day week will be maintained for the time being.

FRANKLIN RESUMES AT ANOTHER PLANT

The Franklin Brick & Tile Co., of Columbus, started plant No. 1 at Taylor's Station February 17 after an idleness of several months. Plant No. 2 at that place has been in operation for some time making drain tile and building tile. Plant No. 1 will manufacture face and common brick exclusively.

WILL START SOON

Frank Nutting, of the Monroeville Clay Products Co., Cleveland, Ohio, states that his organization will be ready to start business in a short time. Legal proceedings before the Federal Court at Toledo, Ohio, are now holding up operations, but an adjustment is expected shortly.

BELDEN MOVES TO NEW OFFICES

The Belden Brick Co., one of the best known manufacturers of face and building brick in the Canton, Ohio, district is moving into its new building at High and Tuscarawas Streets, P. B. Belden, secretary and general manager of the company announced.

Your New Plant
laid out right—
Your Old Plant
made more productive.

Have us lay out, design and supervise the construction of your new brick or clay-working plant.

Let us tell you what we can do to make your old plant a better money maker.

We know how.

FRANK D. CHASE, Inc.
Engineers
645 N. Michigan Ave. CHICAGO

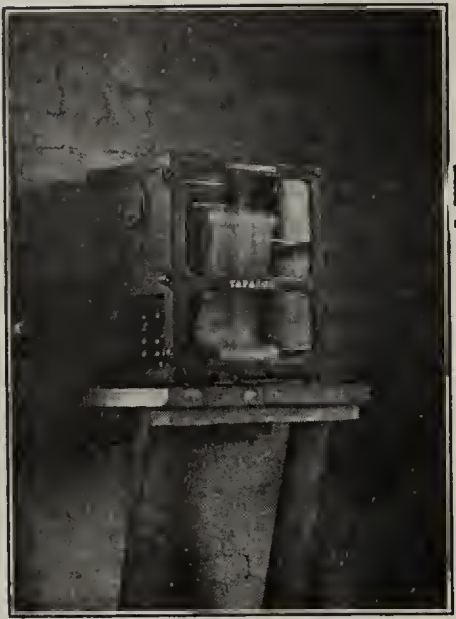
"1922 Will Reward Those Who Lower Their Production Costs"

Every Clay Manufacturer should have a copy of "Clay Plant Construction and Operation," in his library. It is a timely text book containing a wealth of practical information on Labor Saving equipment, efficiency methods, etc.

The price of this handsomely bound volume is **$4.00** prepaid.

You can't afford to be without a copy. Send for it today.

Brick and Clay Record
407 S. Dearborn St. Chicago



Burning is the **Most Important** and **Most Costly** step in the operation of any Clay Products Plant.

The cost and the quality of the results will MAKE or BREAK any company.

Why is it that some manufacturers will spend good time and money going in the minutest details to improve the methods of manufacture up to the point where the kilns are lit and then turn not only the MOST IMPORTANT and MOST COSTLY operation, but the one that determines their SUCCESS or FAILURE, over to men, who at times cannot even read or write?

Is it any wonder that government records show that ONE out of every NINE clay products plants go into DISCARD every year?

The reason is that those manufacturers do not realize that WILSON-MAEULEN TAPALOGS are just as easily and thoroly understood by laborers and burners with no education as by superintendents or owners with college education and many degrees.

Successful clay products plants turn their burning problems over to the Tapalog to guide, look after, instruct, watch and record the burning operation. No owner of a Tapalog has ever gone into the annual discard.

Write for complete information.
It will not obligate you.

WILSON-MAEULEN COMPANY
Concord Avenue and East 143rd Street
NEW YORK CITY

Within a short time the company offices will have been established in the new Belden building, which is of two stories and modern in every respect. The entire upper floor will be used by the Belden company's commercial offices.

WORK BEGINS AT WEBSTER BRICK CO.

The plant of the Webster Brick Co., at South Webster, Ohio, which had been idle for some time was put into operation about February 1. The company makes a line of face brick. A. L. Fullerton is president and S. K. Day, secretary. The company's offices are at Chillicothe, Ohio.

BUILDING NEW DRYER AND KILNS

14 kilns are to be either repaired or razed and rebuilt at the plant of the National Fireproofing Co., East Palestine, Ohio. A new dryer is to be erected, and other internal improvements are under the direction of A. R. Trace. Excavating for the dryer has begun. This will be 90 feet wide and 200 feet in length. Probably two months will be occupied in completing the improvement program, and when the plant does resume, employment will be given to at least 75 men manufacturing hollow building tile. Hereafter, the plant is to be operated by electricity.

IRONCLAY STARTS OPERATIONS

The plant of the Ironclay Brick Co., at Shawnee, Ohio, was started towards the last of February after several months' idleness. The plant manufactures a high-grade face brick. A satisfactory wage scale was offered to the employed and work was started. J. M. Adams is general manager and David Lehman, sales manager of the company.

According to Mr. Adams, prospects for business in brick and clay products have improved materially since the first of February. More projects are coming up and a better feeling is shown in building circles generally.

NEGOTIATING FOR COLUMBUS PLANT

The Central Refractories Co., of Columbus, Ohio, is still negotiating with the board of directors of the Columbus Brick & Terra Cotta Co., which has a plant at Union Furnace that has been idle for a number of years. According to A. N. Spencer, vice-president of the company, the work of investigation is going forward. In case the plant is acquired it will be remodeled and rebuilt and placed in operation. The Columbus Brick & Terra Cotta Co., has been continued and is paying dividends because of the finding of oil on the property.

GIVES PUBLICITY TO IDEAL WALL

With a large amount of building projected for the ensuing spring and summer in Portland, Ore., the Standard Brick & Tile Co. plant of that city is looking forward to a considerable demand for their product. This concern has been giving a great deal of publicity to the Ideal wall, and it is likely that many dwellings of this type will be built in the spring.

The plant is located on the Canyon Road, where common brick, face brick and building tile are manufactured the year round. A number of improvements and additions to its manufacturing and distributing facilities are planned in the near future. Five trucks are in use at the present time to make local deliveries. 35 men are regularly employed.

LOOKS FORWARD TO GOOD YEAR

Oregon products of interest to contractors, architects and home-builders are being manufactured by the Standard Brick & Tile Co. of Portland. This company specializes in the manufacture of burned clay brick and other products and its line, which already includes common brick, a wide variety of face brick, building tile, and so forth is constantly being enlarged to take care of an insistent and growing demand for the artistic and new effects in real burned clay brick and tile.

The company has a plant of considerable extent on the Canyon road, just outside of Portland where all its varieties of brick and face brick, building tile and many other kinds of clay products are manufactured and a number of improvements and additions to the manufacturing and distributing facilities are being planned. With the large amount of building already under way in Portland and a still greater amount projected for spring and summer construction, the company looks forward to a considerable use of its products, both for large buildings as well as in the smaller projects, such as residential construction, where brick is used for fireplaces, chimneys and for other ornamental effect.

It is expected that a number of dwellings will be constructed in the spring using the new "Ideal" wall construction.

DECLARES DIVIDEND

The Harbison-Walker Refractories Co., Pittsburgh, Pa., has declared its regular quarterly dividend of 1½ per cent. on the common and preferred stocks, payable March 1.

NEW COMPANY TO MINE CLAY

The Keystone Fuel Corporation, Pittsburgh, Pa., recently organized under state laws, is planning for the operation of fire clay properties in connection with coal lands in the vicinity of Pittsburgh. The company is headed by J. B. Nicklas, Jr., H. E. Maser and J. H. McClure, and is represented by Hosack, Wickersham & Hosack, 1415 Park Building, Pittsburgh.

J. E. GALLAGHER BUYS PLANT

J. E. Gallagher, of Apollo, Pa., has purchased the brick plant at the Westmoreland County end of the Apollo bridge, formerly owned by John H. Walters, of Johnstown. The plant site includes three acres of ground. A program of general cleaning up and repairing, and probably additional building, will be carried out preparatory to putting the plant in operation.

GLONINGER & CO. HAVE LARGE PLANT

Western Pennsylvnia now has what is said to be one of the largest and most complete clay factories in the state. Gloninger & Co., of Pittsburgh, Pa., are the owners of this great enterprise which is located at Davenport, near Beaver. It is a new plant, but replaces an old structure which for 35 years has been operated by the Gloningers, and has acquired an enviable reputation for making brick.

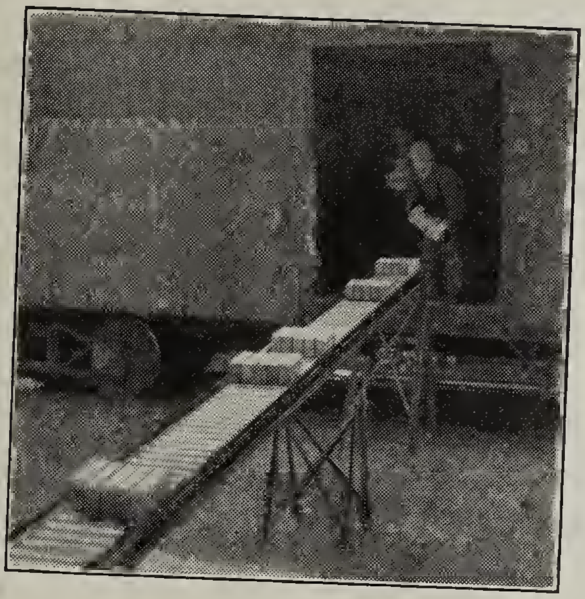
One of the most complete and largest stock sheds in the country, it is claimed, is at this plant, and includes all the latest appliances for making brick of all kinds and descriptions. One of the features of great interest in the new plant is the electrical appliance which handles the brick. This cuts out all possibility of the brick becoming chipped by handling and at the same time speeds up the process of getting the brick loaded. Sample brick walls are laid in the open as a display for visitors to the plant. These show the beads used for artistic color blending.

TO BUILD NEW PLANT ON RUINS OF OLD

The third blaze in the ten years it has been operating recently damaged the Rex Shale Brick Co., of Rapid City, S. D., o the extent of $3,500. Plans for rebuilding were announced hortly after by Mr. Reck, president of the company, who stated hat a new building will be constructed and new and larger nachinery installed.

GETS BIG FACE BRICK CONTRACT

The Sumter (S. C.) Brick Works has recently closed a ig contract for the face brick for the new Shelbourne Hotel



Distance Is Eliminated

Where STANDARD CONVEYORS are used there is no such thing as distance.

The slow and costly methods of manual handling are abolished. Common labor costs are cut to the minimum and skilled laborers are kept busy. There is no more delay waiting for materials.

And remember this is all done by GRAVITY—the universal FREE power. Decide today to take advantage of it.

Write for complete information.

STANDARD CONVEYOR CO.

NORTH SAINT PAUL
MINNESOTA

Another Clay Plant Operator Has Cut His Pit Costs $30.00 Per Day as Well as Improving His Brick.

Read this letter from the S. P. Brick Co., Fresno, California:

"Answering yours of the 10th with reference to the excavator, beg to advise that we are very well satisfied with the machine. It enabled us to eliminate six men in the clay pit at a saving of about $30.00 per day.

Our bank is 14 ft. deep and of a very hard clay formation. Before getting the excavator, we had to use quite a little of powder. This we have also been able to eliminate. Furthermore, we get an even mixture of clay from the bottom of the clay to the top of the pit, which gives us a much better brick.

We estimate that the machine has paid for itself during the last season."

This plant is one of many plants with a capacity of 25,000 to 100,000 brick per day, which are successfully winning their clay by this method.

The one man excavator has taken its place in this day of high labor and freight rates as the most efficient and economical method in speeding up production in smaller plants.

The one man excavator is simple, dependable and will operate in rain or shine. Driven by gasoline or electric power, and will displace a dozen men from the pit. No other machine like it on the market. Its price and operating costs are within the means of the smallest producers.

We also furnish excavator with caterpillar treads.

Write for full information

Bay City Dredge Works
Bay City, Michigan

to be erected at Atlantic City, N. J. Mr. Ryttenberg of this concern has just returned from a trip to New York in connection with the contract, and reports that approximately 200,000 brick will be required for the first wing of the building, which will be put up this year. Plans are not yet completed for the entire structure, so the entire quantity of brick needed is not definitely known. The Hay-Walker Brick Co. of New York is handling the distribution for the Sumter Brick Works, Warren & Wetmore are architects.

TO DEVELOP WASHINGTON CLAYS

Development of the vast clay properties near Sumas, Wash., seems to be assured as a result of a recent visit there of representatives of the Denny-Renton Clay & Coal Co., of Seattle. It is expected that operations will be started early next year on a large scale, and there is a possibility that a plant for the manufacture of clay products will be established there. Such a plant would turn out face brick, refractory wares of various kinds and similar products. The visitors were R. A. Swain, general manager; C. A. Alexander, engineer; G. H. Rogers, ceramic engineer; W. E. Lemley, general superintendent of the properties of the Denny-Renton company, as well as E. Sedgwick, appraiser of properties of the Chicago, Milwaukee & St. Paul railway. The Denny-Renton Clay & Coal Co. has plants at Taylor, Renton, and Van Asselt, Washington, and at Portland, Oregon.

INCREASED CAPACITY TO 25,000

Many improvements were made during 1921 on the plant of the Janesville (Wis.) Brick Works, operated by Freese Bros., so it now has a daily capacity of 25,000 brick. The drying sheds have a capacity of 300,000, and the three kilns the same amount. A great volume of business was done during the past year, and the owners state that their plant has grown steadily since its organization in 1905. They have clay enough to last 20 years. Red building brick and rough texture face brick in various shades are turned out.

FORM POTTERY IN NEW YORK

The Metropolitan Pottery Co., of Queens, N. Y., has been formed with a capital stock of $50,000 by A. and H. Ratner.

THE BUILDING SITUATION

(*Continued from page* 291)

respectively, or more than 4½ times greater. Churches represented the largest individual amount, followed by factories, dwellings and warehouses, in the order noted.

Big Progress at Baltimore

January construction at Baltimore, Md., reached a total of $3,789,600, according to the records of the local building department, or more than twice the amount for the same month of last year. The advance made over the December, 1921, record is also noticeable, the tabulation for this month being $1,133,080.

Plans for 62 dwellings were filed during the month and plans are now in preparation for ten brick school buildings to be erected during the present year, estimated to cost in excess of $2,500,000.

Common brick at Baltimore has become well stabilized at $20, delivered on the job. In the wholesale market, around $18 is the quotation. Face brick is priced at $42 to $50. Large quantities of water-struck material from the local yards are being used for dwelling construction, with $30 and $31 the prevailing level.

Hollow tile, wholesale, is selling for 15 cents per block in carload lots for 4x12x12 inch material; 25 cents for 8x12 inch stock; and 40 cents for 12x12x12 inch. Fire brick is $70 and $75 a thousand.

Pittsburgh Building Opens Up

The coal and steel industries, the barometers by which all other interests in the Pittsburgh, Pa., district are governed, are gradually resuming operations and as a consequence building operations which have heretofore been somnolent to say the least have been showing a semblance of activity recently. As a result of this, brick manufacturers are beginning to look forward to a much firmer market for their products than has existed for some time. In the Beaver Valley several firms are reporting orders sufficient to keep them operating on a capacity basis for quite a while in the future. In Pittsburgh during the last week there were applications for building permits aggregating a grand total of over $500,000. This is quite an increase over the previous week and it is confidently predicted that this amount will be dwarfed in the weeks to come providing the weather remains favorable to building.

Building Dormant in Chicago

Building in Van Nuys, a suburb of Los Angeles, during 1921 reached $723,592, nearly all of which was for homes of moderate cost. Of course, it is expected to raise this sum during the coming year.

Building in Chicago still retains its sluggish character, and the building permit column in the daily papers shows but few permits over $25,000 valuation. Extremely cold weather has stopped all but the most necessary operations.

The labor situation, which two weeks ago seemed cleared up, is again causing anxiety to contractors and supply men. The plumbers on February 16 voted unanimously to repudiate the Landis award, despite the acceptance of these terms by William A. Curran, their business agent, and also president of the Building Trades Council. As a result, Curran tendered his resignation as president of the Council, declaring that he would rather retain his job as business representative of the plumbers' union. No successor has been announced for this job.

Men who are on the inside state that labor will have to "come across" this time and conform to the demands of the Citizens' Committee.

Cleveland Labor Situation Brighter

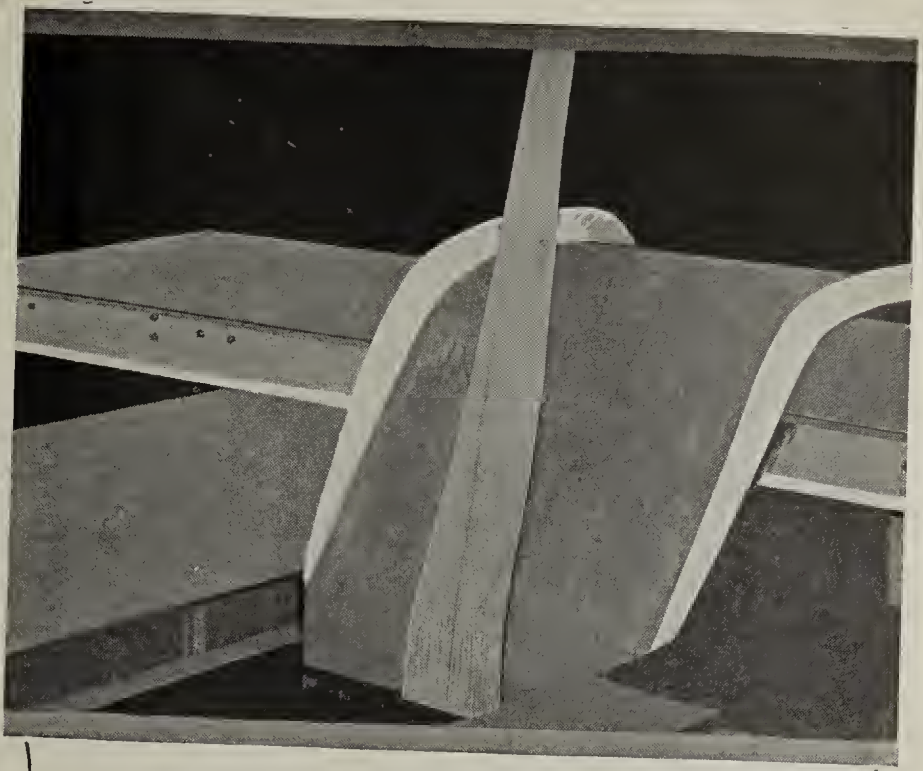
The much discussed labor controversy in Cleveland seems well on the way to settlement. Rumor has it that the Building Trades Employers' Association offers a renewal of last year's agreement with a 13.5 per cent. wage cut. This is not verified. This much is sure—the situation is not characterized by the tenacity and unwillingness to compromise that brought on the building strike last year.

The Chamber of Commerce recently addressed letters to both the Building Trades Council and the Building Trades Employers' Association in which it asked both organizations to eliminate all restrictive clauses that would tend to limit production or unduly increase costs, from their working rules. The missive in effect, is a plea for open shop, and the request of the Chamber of Commerce is not tempered with any camouflage.

The announcement that the Cleveland Discount Co. is prepared to lend $15,000,000 on store, office and dwelling projects, has reacted quickly and favorably on the local situation. Within a week came the news that private operators had acquired 58 parcels in the exclusive Heights district upon which they plan the erection of dwellings costing $7,500 each. Work will begin with the opening of the season. Other smaller projects recently announced call for the erection of ten $10,000 houses in the East End, and fourteen $6,000 dwellings in the Lakewood section.

Building Continues Strong in Atlanta

The revival of building activity in Atlanta, Ga., since the first of the year portends a prosperous year for the brick industries of the southeastern territory, as a number of new



Gandy Belt Resists Heat, Water and Steam

THE oil treatment of a Gandy Belt makes it proof against the deteriorating effects of water, heat and steam; adds pliability and years of wear.

Through forty years' experience Gandy oil treatment has improved steadily. The kind and combination of oils used, the proper temperature, the duration of the process, all are reflected in the quality of the finished belt. Gandy experience knows how to handle these factors best.

In the Gandy factory great stress is laid upon this step in the making of the belt. The purest oils are used, combined according to the private Gandy formula. The belt is **saturated,** not just the surface. It is a preservative, which insures a pliable belt and one that stays so, long life and service in conditions where an ordinary belt would break down.

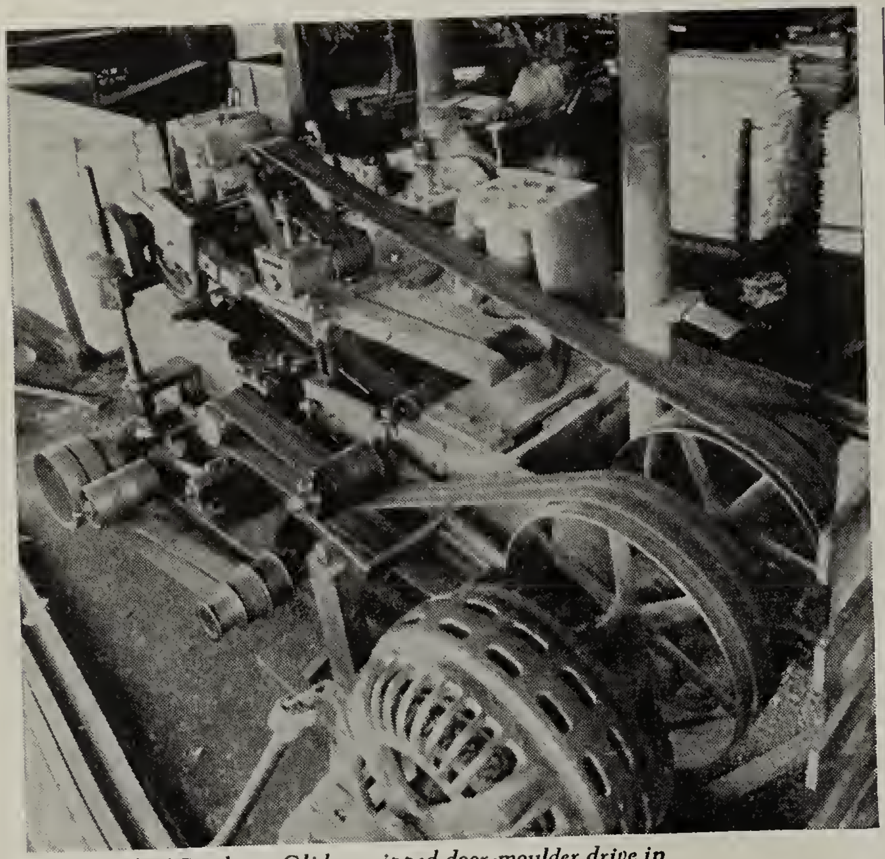
Gandy ability to operate in places where there is not only hard wear, but hard conditions, has made this belt the standard in the brick and clay industries. It is giving superior service on main drive, conveyor and elevator installations.

Equip your plant with Gandy Belt for economy, service and long wear. See that every belt you buy has the green edge, the Gandy name and the special Gandy trade mark.

THE GANDY BELTING CO.

MAIN OFFICE AND FACTORY
732 W. PRATT ST. - BALTIMORE, MD.
NEW YORK: 36 WARREN STREET
CHICAGO: 552 WEST ADAMS STREET

GANDY
STITCHED COTTON DUCK
BELT



Photograph of Goodyear-Glide-equipped door-moulder drive in the plant of Pacific Door & Sash Co., Los Angeles, Calif.

The Door-Moulder Drive —and the G. T. M.

The superintendent believed the belts they were using in the plant of the Pacific Door & Sash Company, of Los Angeles, California, could not be improved upon; for they were the best of many kinds the company had tried.

But he was reasonable about it, and he could see the point made by the G. T. M.—Goodyear Technical Man—that the most economical and long-lived belt was the belt that was *specified to its work*. So he agreed to test the Goodyear Analysis Plan on a single drive.

The drive he picked out was the plant terror—the door-moulder drive—a hard, high-speed, belt-eating drive, with an action that subjected its belting to an unusual amount of flexing. Four months was the longest any belt had stood up to the door-moulder punishment.

The G. T. M. noted every fact about the drive. The superintendent co-operated by supplying data on operating conditions peculiar to the plant. A Goodyear Glide Belt, 5-inch, 4-ply, which is specially constructed for fast, hard work, was recommended.

The Goodyear Glide hung to the door-moulder for nine months—more than double the life of the best previous belting. Moreover, because of its pulley-gripping qualities, slippage was reduced to a minimum.

Goodyear Belts sometimes cost more to buy, but this one had the added virtue of costing only two-thirds the price of the belt it replaced. So, considering its long life, its economy was nearly four times greater than its predecessor's. That convinced the superintendent. He had the G. T. M. analyze every drive in the mill. Another Glide is now mastering the door-moulder, and 25 other drives are equipped with Goodyear Belts.

What Goodyear Belts do on the hard drives of the woodworking industry, they can do on your hardest drives. A G. T. M. analysis will go a long way toward convincing you of that. For further information about the Goodyear Analysis Plan or about the reliable performance of Goodyear Conveyor and Transmission Belts in your particular industry, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

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apartment buildings are being constructed and brick continues to be largely used for home construction. In January Atlanta exceeded the million dollar mark in valuation of permits issued, there being 128 permits for dwellings of a total value of about half a million dollars. So far in February this activity has continued unabated and there is every prospect of one of the most prosperous building years in the city's history.

Considerable activity in building also is reported thruout the Sixth Federal Reserve district, which comprises the group of southeastern states, most of this construction being in the larger cities and industrial centers.

Birmingham District Slow

The biggest contract awarded during the past ten days in Birmingham, Ala., was for the building of the John Herbert Phillips High School. This contract is for $55,000. The building will be built of Birmingham made brick, trimmed with stone.

A number of small store buildings and small private residences are being constructed of brick and hollow tile thruout the city, but there is no large amount of brick being used in construction work in the Birmingham district at the present time.

At the present time there is more labor for building purposes than there is work to be done in Birmingham and the Birmingham district, contractors say. However, the laborers and the mechanics employed on buildings are receiving fair wages as compared with the reduction in general living expenses.

The high price of lumber for framing and other purposes is thought to be retarding the building program there.

Contractors say they expect a fair business this year to open up with the coming of spring. However no building boom of any considerable magnitude is expected.

San Francisco and Oakland

The brick and clay industries in and around San Francisco are gradually increasing in volume in conformity with the steady increase in building activities. With a total value of $5,528,978, the building permits issued in San Francisco during January, according to the monthly report of the chief building inspector for the Board of Public Works, surpassed any monthly record for construction in this city since the reconstruction period following the conflagration in 1906.

Building permits in Oakland, on the east side of the San Francisco Bay, for the first month of the new year reached a total of $1,329,405, or more than 100 per cent. increase over the largest previous January in the history of Oakland construction, according to figures issued by the municipal building inspector. The largest previous corresponding month was in January, 1913, when the permits had a total cost of $608,822. It is pointed out that the remarkable feature of the increase is the fact that the largest permit issued during the month was for an apartment house at a cost of $111,000. There were 581 different permits issued in January, and the majority of them were for home construction. Permits for a number of contemplated down-town office sky-scrapers and theatres have not yet been applied for and will run the total into millions with the result that Oakland during the current year will establish an enviable high mark for new construction.

Los Angeles Gains 125 Per Cent. over 1921

If the building record of January is maintained, this year will put Los Angeles in a class second only to New York. Up to and including January 27, building permits to the number of 3,184 have been issued, carrying a total valuation of $7,513,997. In January of 1921, 1,871 permits were issued, valued at $3,301,714, and for the 27 days of that month, the valuations

CONDUCTING TESTS ON FIRE CLAYS

In the course of the investigation of the oxidation of ceramic wares during firing being made by the Bureau of Mines at Columbus, Ohio, laboratory tests have been made on fire clay from Fallston, Pa., and the products burned at different temperatures to determine the safe rate of oxidation and water-smoking of the ware produced at the Fallston plant. Soundness of the product was determined by making up bars from raw clay, burning to different temperatures for different lengths of time and then determining their cross breaking strength. The rate of oxidation penetration was observed on the same bars. The cause of the appearance of a pink core after the black core has disappeared and the methods of overcoming this charge are being investigated. A new type of volumeter is being tried out to determine the suitability for measuring the porosity of the ware during the progress of firing and the desirability of firing to a definite porosity.

Machinery and Equipment

Descriptions of Machinery and Accessories and Detailed Announcements that Our Advertisers Believe Will Interest Our Readers

The complete Osgood line is shown in their General Catalog No. 122, which is now ready for distribution.

Osgood revolving shovels mounted on continuous tread trucks or railroad trucks, equipped as shovel or as clamshell or dragline, digging fire clay or performing other work, all types are depicted in this catalog.

Representatives of The Osgood Company are located in about 20 different states, insuring prompt attention to your order. Address your inquiry to the main office at Marion, Ohio, for a copy of the catalog.

⁂

Stratton Engineering Laboratories, 431 So. Dearborn St., Chicago, are now ready to give service to clay products manufacturers who are interested in draft control and air circulation.

⁂

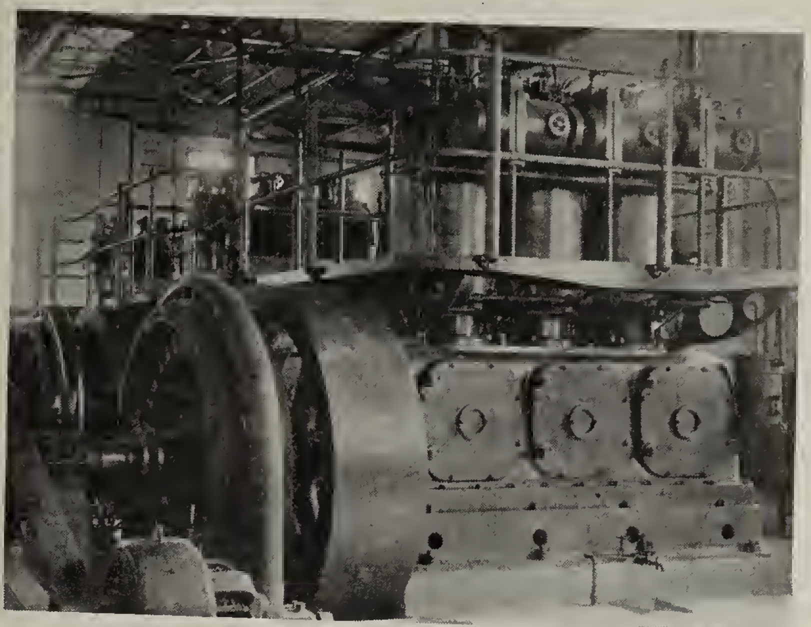
The Kennedy-Van Saun Manufacturing & Engineering Corporation have on the market a new type of crusher, called the Kennedy Gearless Crusher. It is built on the plans of a gyratory crusher, but is driven by rope or belt. This avoids the expensive gears used in the ordinary gyratory crusher. It is made in three sizes that are suited to take shale or fire clay from the pit and reduce it to a size suited to feed into the dry pan. The small size will take anything 5½ inches in diameter, and the second size anything up to 7 inches in diameter, and third up to 12½ inches in diameter.

This type of crusher can also be used for crushing grog for mixing with the clay to reduce the shrinkage of the mixture, or to provide sand for setting the ware.

More complete information can be secured from the Kennedy-Van Saun Manufacturing & Engineering Corporation, 120 Broadway, New York City.

⁂

This company is also manufacturing and pushing a heavy duty roll crusher, which has several unique features. The rolls are equipped with patent sluggers or protruding points which are staggered. These crushers will reduce any hard shale or clay to pieces a half inch in diameter or finer. One of the fine features of this crusher is that the so-called angle of nip, which governs the sizes of pieces that can be crushed by plain rolls, has no effect on its capacity. In addition, it is not necessary that the clay or shale must be perfectly dry as is usually the case with plain rolls. This crusher is built very ruggedly for heavy duty service.



Now

Is the Time to Prepare for Economical Production

This is the breathing time. The demand for unceasing production has momentarily slackened. The present pause gives us all an opportunity to "take stock" and to prepare for the coming resumption of high speed activity.

Is your plant equipped to meet as efficiently as possible the problems that this new era will hold? The day of wasteful methods is over—"production at any cost" is past. The clay products manufacturers who win out in the present and in the future will be those who devote time and study to the methods and equipment which produce not only maximum efficiency, but also MAXIMUM ECONOMY.

To get results which are satisfactory from all machinery throughout your plant it is highly necessary that your power plant equipment be 100% efficient.

SERVICE

ECONOMY

The best way to solve this problem is by installing RATHBUN GAS ENGINES. They insure efficient and economical power at all times. Built in 2, 3, 4, 6 and 8, cylinder sizes. Operate on natural, producer, illuminating or by-product gases—absolutely dependable.

Write us for complete information

Rathbun-Jones Engineering Co.
Toledo, Ohio

Trade Names Now in Use

on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.

ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.

ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.

ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.

ARKATEX—Southern Building Products Co., Little Rock, Ark.

ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.

ART-TEX—W. E. Loomis, Sherbrooke, P. Q.

ARTISTICO—Capital Clay Co., Des Moines, Ia.

ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.

ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.

BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.

BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.

BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.

BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.

BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.

BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.

BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.

BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.

CALEDONIAN—Fiske & Co., Inc., Boston and New York.

CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.

CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.

CLAYTEX—Walton N. Cable, New York City.

CLOISTER—Western Brick Co., Danville, Ill.

COLONIAL—Capital Clay Co., Des Moines, Ia.

CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.

CORALTONE—Harris Brick Co., Zanesville. O.

CORALROSE—Harris Brick Co.. Zanesville. O.

COLUMBIA—Columbia Clay Co., Columbia, S. C.

CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.

CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.

CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.

CROWN—Green Fire Brick Co., A. P., Mexico, Mo.

DENISON—Mason City (Ia.) Brick & Tile Co.

DE LUXE—The Standard Brick Company, Crawfordsville, Ind.

DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.

DORIC—Western Brick Co., Danville, Ill.

DUNBAR—United Refractories Co., Uniontown, Pa.

EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.

E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.

ELKCO—Elk Fire Brick Co., St. Marys, Pa.

ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.

ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.

EMBOSTEX—Streator (Ill.) Brick Co.

EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo.

EMPIRE—The Minor Fire Brick Company, Empire, Ohio.

EMPIRE—Western Brick Co., Danville, Ill.

EVERHARD ANTIQUE—Everhard Co., Massillon, O.

EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.

EVERHARD DOUBLE-TEXTURE—Everhard Co., Massillon, O.

EVERHARD FERN-LEAF—Everhard Co., Massillon, Ohio.

EVERLASTING—Mason City (Ia.) Brick & Tile Co.

FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.

FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.

FISKLOCK—Fiske & Co., Inc., Boston and New York.

FRASERCLAY—Fraser Brick Co., Dallas, Texas.

F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.

F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.

F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.

FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.

FROSTBURG ROUGH TEXTURE — Savage Mountain Fire Brick Co., Frostburg, Md.

FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.

FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.

FULTONHAM-TEXTURE — Fultonham-Texture Brick Co., East Fultonham, Ohio.

GLONINGER IRON SPOTS—Gloninger & Co., Pittsburgh, Pa.

GOTHIC—Western Brick Co., Danville, Ill.

GREENDALES—Hocking Valley Pro. Co., Columbus, O.

GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.

GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.

GRID—Fiske & Co., Inc., Boston and New York.

HAWK-I-TEX—Capital Clay Co., Des Moines, Ia.

HAYES RUN—Hayes Run Fire Brick Co., Orviston, Pa.

HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston, Pa.

HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.

HI-GRADE—Southwest Building Supply Co., Springfield, Mo.

HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.

HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.

HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.

HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.

INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.

IRONCLAY—Iron Clay Brick Co., Columbus, O.

IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.

KELSO—Hayes Run Fire Brick Co., Orviston, Pa.

KEYSTONE—Elk Fire Brick Co., St. Marys, Pa.

LADLE—The Zoar Fire Clay Company, Zoar, Ohio.

LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.

LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.

L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.

LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.

LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.

M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.

MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.

METALTEX—Columbia Clay Co., Columbia, S. C.

MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.

MINOR—The Minor Fire Brick Company, Empire, Ohio.

MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.

MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.

MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.

MOBRIQUE—Harris Brick Co., Zanesville, O.

MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.

MOSAIC—Western Brick Co., Danville, Ill.

NATIONAL—The National Fire Brick Company, Strasburg, Ohio.

NO. 1—J. H. Gautier & Co., Jersey City, N. J.

NUVOGUE—Boone (Ia.) Brick, Tile & Pav. Co.

OIL—J. H. Gautier & Co., Jersey City, N. J.

OLD HOMESTEAD—Burton-Townsend Co., Zanesville, Ohio.

OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.

OLEAN BLOCK—Sterling Brick Co., Olean, N. Y

ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.

OXFORD—Southern Brick and Tile Company, Louisville, Ky.

PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.

PERSIAN SPLIT—Thomas Moulding Brick Co., Chicago, Ill.

POS-TEX—Poston Brick Co., Springfield, Ill.

POTOMAC-SAVAGE—Savage Mountain Fire Brick Co., Frostburg, Md.

"POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.

PROMENADE—Yingling-Martin Brick Co., Johnsonburg, Pa.

RAINBOW — Burton Townsend Co., The, Zanesville, Ohio.

RED ROCK RUFFS—Auburn Shale Brick Co., Auburn, Pa.

ROTEX—Elk Fire Brick Co., St. Marys, Pa.
Gettysburg, Pa.

ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.

RUBYTEX—Columbia Clay Co., Columbia, S. C.

RUFTEX—Thomas Moulding Brick Co., Chicago.

RUG—Hocking Valley Pro. Co., Columbus, O

RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.

ST. MARYS—Elk Fire Brick Co., St. Marys Pa.

SAVAGE MOUNTAIN—Savage Mountain Fir Brick Co., Frostburg, Md.

SHALE-TEX—Streator (Ill.) Brick Co

SIL-O-CEL—Celite Products Co., Chicago, Ill

S. M.—Savage Mountain Fire Brick Co., Frostburg, Md.

S. M. A.—Savage Mountain Fire Brick Co. Frostburg, Md.

S. M. EXTRA—Savage Mountain Fire Bric Co., Frostburg, Md.

SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.

SPEEDWAY BLOCK—Alliance (O.) Clay Prod Co.

STANDARD—Green Fire Brick Co., A. P Mexico, Mo.

STANDARD—The National Fire Brick Com pany, Strasburg, Ohio.

TAPESTRY—Fiske & Co., Inc., Boston an New York.

TAVERN BRICK—Metropolitan Pav. Bric Co., Canton, O.

TEXTUR—Thomas Moulding Brick Co., Chi cago, Ill.

TIFFANY—Thomas Moulding Brick Co., Ch cago, Ill.

TORONTO—Toronto Fire Clay Co., Toronto,

TOWNSEND BLOCK—The Burton-Townsen Co., Zanesville, Ohio.

TURKESTAN—Beaver Clay Mfg. Co., Ne Galilee. Pa.

TURKO—Rochester (Pa.) Clay Products Co.

UNITED—United Refractories Co., Uniontow Pa.

U. R. CO.—United Refractories Co., Uniontow Pa.

U-TEX—Fultonham-Texture Brick Co., Ea Fultonham, Ohio.

VERTEX—Beaver Clay Mfg. Co., New Galile Pa.

VITRI-CRAFT—Schuylkill Valley Vitrifi Products Co., Oaks, Montgomery Co., Pa

VOLCANIC—Beaver Clay Mfg. Co., New Ga ilee, Pa.

WATERPROOF—Gloninger & Co., Pittsburg Pa.

WIRE-CUT-LUG BRICK—Dunn Wire-Cut L Brick Co., Conneaut, Ohio.

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BRICK and CLAY RECORD

Established 1892. Now in its twenty-ninth year.

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By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland Kansas City
Address all communications to home office

Chicago, March 7, 1922
Vol. 60 No. 5

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Hollow Tile Makes Good

IMMEDIATELY after the Knickerbocker Theatre castastrophe, which took so many lives on January 28 in Washington, D. C., there were many opinions offered for the roof collapse. A large number of reports were unfavorable to the hollow tile used in the building of this structure. Many newspapers carried notices which put the blame unjustly upon hollow tile. However, intensive investigations made since the disaster have not only vindicated this material, but have proven it to be of much greater strength than required.

At least five independent investigations by nationally recognized authorities have been completed since January 28. Each of these authorities has been able to trace the secondary cause of the roof collapse to the fact that the main roof truss slipped or was pulled off its I beam seat.

It was supported at the south end on a steel column and at the north end on a 20-inch I beam bearing plate bedded into a hollow tile wall, and into which four secondary roof trusses were framed. There are two or three differences of opinion as to the first failure in the steel structure, all of which are possible causes of this failure.

Colonel Wm. Kelly, representing the Committee of Army and Navy Engineers appointed by the District Attorney to investigate this theatre, reports in testimony before the coroners jury that if the steel framing roof structure had been properly designed, properly fabricated, properly erected, the failure of one or two beams or purlins would have been entirely localized and would not have caused the general collapse of the roof structure as a whole, in spite of the fact that that roof structure was almost entirely supported on hollow tile walls. Colonel Kelly also reported that a sample of the poorest quality of tile that he could find on the job was sent to the Bureau of Standards for testing, which was reported as showing a strength far above ordinary requirements.

The exterior bearing walls in the Knickerbocker Theatre were built of hollow tile (20 inches thick at the bottom and 16 inches thick at the top) faced with four inches of limestone veneer in the first story and four inches of face brick veneer in the second and third stories which were not bonded to the hollow tile backing with the commonly recognized masonry bond. Simple galvanized iron anchors were used to tie the veneer with the backing. These walls are approximately 40 feet high and the Columbia Road wall follows the arc of a circle and is approximately 115 feet long from the intersection of the stage wall to the rear corner of the theatre. In this Columbia Road wall was built a 20-inch I beam, approximately eight feet long, which served as a seat for the one end of the main steel truss, which carried a concentrated load of 102,000 pounds.

If the ends of the steel roof trusses and beams had been anchored to the tile walls, they would have pulled off portions of the tile with them in falling. However, this was not the case, and the roof structure was permitted to fall, leaving the tile walls standing intact in almost as good condition as the day on which they were erected. Under ordinary conditions, the collapse of a roof structure which failed as this structure did, that is, one side first, followed by the other side, would have pushed over the wall entirely, but in spite of this severe test on these tile walls, the fact remains that the tile walls are still standing as a monument to good masonry materials and construction.

* * *

Small Communities A Large Field

THE Bureau of Census 1922 figures, as analyzed by the Division of Building and Housing of the U. S. Bureau of Standards, show that there are 11,212,652 of the 20,697,204 dwellings of the country located in communities of less than 25,000 inhabitants. Such facts should have a vital bearing on the marketing methods of those selling materials and supplies to present and prospective home owners.

If it were assumed that the average value of these dwellings was only $4,000 each, this would mean something like $45,000,000,000 worth of residential buildings in small communities. Assuming a depreciation of slightly more than two per cent. per year for these dwellings, it would mean practically $1,000,000,000 worth of building each year for dwellings alone. If to this were added the amount of money spent for the construction of garages, farm structures, schools, municipal buildings, and so forth, the amount of building done in small communities would sum up to an enormous total.

By far the greatest part of the building materials entering into this construction is handled thru the building supply dealer, but whether you distribute your product thru the dealer or not, this item should show you the importance of the building field in the small communities. The value of intensive development of this market is obvious.

* * *

Better Service from the Bricklayer

THE BUILDING products manufacturers in the clay industry are very much pleased over the recent agreement entered into between the Department of Justice and the international organization of bricklayers, masons and plasterers. This agreement is recorded in the U. S. District Court for the Southern District of New York. The decision means better service to the public by removing undesirable restrictions, and makes it just so much better for the material manufacturer whose product is handled by the workmen affected in this agreement.

Briefly, the provisions relate to four basic principles, and forbid any concerted effort at curtailment of production by any such limitations upon the productive capacity of the individual.

There is to be no limit upon the right of the employer to purchase his material wherever and whenever and from whomever he may choose, whether those materials be union-made or otherwise.

There is to be no favoritism shown by organized labor toward employers, trade associations or contractors associations, and no discriminations are to be indulged in against the independent employer who may not be a member of such an association.

The labor organization is not to be used or permit itself to be used by material men, contractors or subcontractors as an instrument for the collection of debts or enforcement of the payment of alleged claims.

The efforts of the trade associations in the clay products industries who are investigating the properties of their materials, and cooperating with the bricklayers and builders for the more efficient and better use of their products, the help of the architects thru the splendid service of D. Knickerbacker Boyd, together with the recent agreement mentioned above, should collectively do much to serve the public better in masonry construction, and by serving the public better we serve ourselves.

Over 400 Ceramists Attend Convention

Much Credit Is Due St. Louis Local Committee for Splendid Management of the American Ceramic Society's Greatest Convention

THE TWENTY-FOURTH Annual Convention of the American Ceramic Society will pass into history as having even exceeded the wonderful and unusual progress of the preceding meetings. Each year there has been reported a remarkable growth in membership, scope and interest. An attendance of 408 at last year's meeting was thought to be an almost unsurpassable figure. Similarly, it was thought that the pinnacle of activity had almost been reached. This year's attendance of 415 registered delegates and the progress reported exceeded the most optimistic hopes and proved that the society is still reaching into fields of new endeavors which the modern industrial fabric of this country requires.

The meeting which was held at the Hotel Statler, St. Louis, Mo., on February 27 to March 3, inclusive, was not only a record one with respect to the above-mentioned points, but was unusually well managed by the local committee, who spared no efforts to facilitate the smooth progression of each event.

Attendance Exceptionally Good

Attendance at the various division sessions, as well as at the general session, was exceptionally good, and the liveliest interest was displayed in the papers presented. The enamels division had the highest number of representatives present. 90 men registered from this division.

The heavy clay products division also had a good representation. 70 men from this division attended. Altho the youngest of the seven divisions, this section is already displaying an enthusiasm which rivals that of the other divisions. A splendid program was arranged for this division, and the sessions were of the greatest interest. Full report of the sessions of the heavy clay products division will be contained in the March 21 issue of Brick and Clay Record.

General sessions began on Monday morning, and were opened by Mayor Henry W. Kiel, of St. Louis. Mr. Kiel told of his connection with the clay industry years ago in the capacity of bricklayer. Altho the ceramic industry has made great progress, he said, there is still much room for improvement.

Wants Society to Publish Handbook

Following the speech of Mayor Kiel, President Forrest K. Pence addressed the meeting. Mr. Pence stated that the American Ceramic Society should be linked together in a program to promote the common good. He also mentioned that the society should arrange to publish a ceramic handbook, as it is badly needed.

Secretary Ross C. Purdy then said that complete reports of all the committees had been printed in a 115-page booklet, which was distributed among the membership. These reports were not read. The secretary also announced that Volume 1, Number 1 of the American Ceramic Society Bulletin, a bi-weekly publication, had been published and urged every member to subscribe.

The president then introduced E. W. McCullough, manager, Fabricated Production Department, Chamber of Commerce of U. S. A. Mr. McCullough spoke on "Reduction of Varieties in Manufactured Products." He stated that elimination of waste thru machinery and standardization wherever possible, was absolutely necessary.

This talk was followed by a paper on "Prophetic Cost Accounting," by G. W. Greenwood, treasurer, United Refractories Co., Dunbar, Pa. Mr. Greenwood made the startling statement that less than ten per cent. of the country's industries have cost systems. The real value of a good cost system, he brought out, lies in its ability to predict costs.

Suggests Method for Classifying Clay

Prof. C. W. Parmelee, of the University of Illinois Ceramic Department, presented a paper on "Proposed Classification

Frank H. Riddle, President

◆

E. W. Tillotson, Vice-President

of Clays." Opinion regarding the method of classification is varied, said Prof. Parmelee. He suggested that clays be classified according to burning properties.

An interesting paper was read by Dwight T. Farnham, industrial engineer, on "Waste in Industry." Mr. Farnham made the significant statement that American industry was overbuilt. He also mentioned some of the factors responsible for low production.

Many other interesting papers were presented.

On Monday evening a smokerette was held in the ballroom of the hotel, which a large number attended.

The banquet held on Tuesday evening was also a distinct success. Both the smokerette and the banquet were a credit to the entertainment committee, which spent a considerable amount of money to provide a good time.

The officers installed at the banqut were:

President, F. H. Riddle; vice-president, Dr. E. W. Tillotson; treasurer, R. K. Hursh; secretary, Ross C. Purdy; trustee, B. E. Salisbury.

Frank H. Riddle, of Detroit, Mich., the new president, is a graduate of the Ohio State University, and since that time has had broad experience in the manufacture of art pottery, terra cotta and heavy clay products. In the latter field he has had considerable experience at some of the large concerns on the Pacific Coast. At present he is consulting engineer and chief chemist of the Champion Porcelain Co. and the Jeffrey-DeWitt Insulator Co. Mr. Riddle's experience in the ceramic industry has been well rounded, both as technical man in the developing of ceramic products and in the managing and building of plants. During the war he worked with A. V. Bleininger, then Director of the Ceramics Division of the Bureau of Standards, and it was chiefly his efforts which resulted in the developing of the spark plug used in the aeroplane during the war.

E. W. Tillotson of the Mellon Institute, Pittsburgh, Pa., vice-president of the society, is one of the leading glass experts in this country, and is of high standing among physical chemists. B. E. Salisbury, president, Syracuse (N. Y.) China Co., who was elected a member of the board of trustees, is widely known among potters and is an officer in the U. S. Potters' Association. Because of his business and practical experience, he is a valuable acquisition to the society's board of trustees.

On Wednesday evening, several interesting moving picture films were exhibited, showing the manufacture of glass; the manufacture of Armco ingot iron and special steel sheets, by courtesy of the American Rolling Mill Co.; the manufacture of terra cotta, courtesy of the National Terra Cotta Association, and the American Equipment system of machine handling, setting and unloading.

Thursday and Friday were devoted to inspection trips. Quite a large number availed themselves of the opportunity of seeing the manufacturing methods in use in St. Louis.

Before the general meetings were adjourned, it was decided

This Picture Taken at the Banquet Held Tuesday Evening, February 28, in the Ball Room of the Hotel Statler Do to hold the 1922 summer meeting of the A. C. S. at Toronto and Montreal, and the 1923 annual convention will be held at Pittsburgh, Pa.

Announcement was also made of the contemplated trip to England to visit British ceramic plants, under the auspices of the English Ceramic Society. Anyone who is interested in this trip, which will probably take place the latter part of August, should signify his intentions at once.

White Ware Division

Sixty-eight persons registered for the White Ware Division meeting, and each session was not only exceedingly well attended, but the delegates remained thruout the entire meeting. About 14 papers were presented, and three colloquiums. The papers included various subjects pertinent to whiteware manufacture, including the use of modern mechanical appliances, nature of raw materials used in manufacture and specific problems entering into the manufacture of saggers, electrical porcelain, general ware, and so forth.

There were in attendance, representatives of the following branches of the whiteware industry: Raw materials, general ware, floor and wall tile, sanitary ware, and electrical porcelain.

The first paper on the program was presented by A. P. Ball and was entitled, "A Conveyor System for Loading and Unloading Kilns." This paper discussed an unusually novel method used by a pottery plant, whereby belt conveyors and gravity roller conveyors are used to load and unload the periodic kilns. Briefly, the system consists of one long belt conveyor, starting from a loading station and upon which saggers or ware may be placed either on the top or lower belt. Cross conveyors, usually of the gravity roller type, transfer the material from this primary conveyor and convey it into the kiln or the reverse process when the kiln is in process of unloading. By the use of this system a considerable saving has been effected. Two gangs of men formerly required 180 hours for loading a kiln, whereas, under this new method, two men now load a kiln in a day.

Many Interesting Papers

Other papers presented at this session were on subjects as follows: "New Procedure in Preparing Dust for Dust Presswork," by H. Spurrier; "Investigation of Dust Press Practice as Influencing Finished Sizes and Cracking," by H. Spurrier; "Operation of the Tunnel Kiln at the Plant of the Champion Ignition Co., Flint, Mich.," by S. J. McDowell and P. D. Helser; "Better Saggers," by Charles F. Geiger.

Following a discussion on cooperative research in sagger mixtures and manufacture, led by C. C. Treischel, the division went on record in favor of cooperative research of the sagger problem as applied to the different groups, and recommenda-

Show All of Those Present. The Large Hall Was Entirely Filled and a Goodly Number of Ladies Were Also Present.

tions were made to canvass the various trade associations in the whiteware industry, to carry on this work this year.

The whiteware division has grown considerably during the past year, largely due to the splendid efforts of the secretary, C. C. Treischel.

Officers for the forthcoming year were elected as follows:

Chairman, Samuel B. Larkins, National China Co., Salineville, Ohio; secretary, C. C. Treischel, General Electric Co., Schenectady, N. Y.; chairman Research Committee, F. K. Pence; chairman Rules Committee, August Staudt; chairman Membership Committee, I. A. Sproat; members Standards Committee, F. S. Hunt and H. Spurrier; member Nominating Committee, H. E. Goodwin.

Refractories Division

Only one other division exceeded the attendance of the Refractories Division which had a total registration of 87 members. About 12 papers were presented at the various sessions, the average attendance of which at all times was about 60 persons. A. F. Greaves-Walker presided as chairman and F. A. Harvey was secretary. The officers for next year were elected as follows: Chairman, J. Spotts McDowell, of the Harbison-Walker Refractories Co., Pittsburgh; vice-chairman, E. H. Van Schoick, of the Chicago Retort & Fire Brick Co., Ottawa, Ill.; secretary, Fred Harvey, United States Refractories Co., Mt. Union, Pa.

At the first session of the division which was held on Tuesday morning, refractory clays from all principal regions were discussed. The properties of the clays of the different beds now being worked were described.

Dr. Kurd H. Endell, professor of ceramic engineering, Technical High School, Berlin, read a paper on the testing of silica brick. He described a new type of furnace for testing silica brick under load and made comparisons between brick manufactured from various types of German quartzites and three principal American quartzites. The German quartzites are more rapid in conversion and require less fuel to burn. The German practice is to burn their silica brick at a much lower temperature than Americans do. Most silica brick in Germany are burned to a temperature corresponding to cone 14.

B. E. SALISBURY

Investigating American Refractory Manufacture

Dr. Endell made the interesting disclosure that the steel companies of Germany are making higher grade brick than the independent refractories concerns. Dr. Endell has been sent over to this country by a group of German manufacturers to investigate American practice in the manufacture of refractories.

E. N. McGee, of the Semet-Solvay Co., Syracuse, N. Y., delivered a paper entitled "The Comparison of Hot and Cold Modulus of Rupture for Silica Brick," in which he described a new method for measuring the hot modulus of rupture of refractory brick. He described results of a series of tests on silica brick, which indicate that the brick showing the best cold modulus does not necessarily show the best hot modulus.

R. M. Howe, of the Mellon Institute, Pittsburgh, in his paper, "Influence of Grind and of Firing Temperature on Properties of Silica Brick," showed that within the limits of the grind used in commercial practice, there is very little difference in the cold modulus of rupture and that the cold modulus of rupture increases decidedly as the brick are burned harder.

Describe New Regenerative Tunnel Kiln

Phillip Dressler of the American Dressler Tunnel Kilns, Inc., showed a blue print of a new regenerative tunnel kiln, the principle of which was worked out by Messrs. Dressler and Wilputte. Mr. Wilputte has had wide coke oven experience. The object of this new kiln is to burn large ware and it is hoped that the kiln will be applicable to the burning of first quality fire and silica brick. The kiln differs from ordinary tunnel kilns in that it has provision for a double track and has also the regenerative feature. The cars run in opposite directions and give up their heat to one another. Moreover, the tunnels are built in sections about twelve feet long. The interior width of the kiln is approximately ten feet.

Dr. Endell stated that a kiln similar in construction to this kiln has just recently been put into use by a concern in Germany for burning silica brick. The kiln was originally built 350 feet long, but it had been found necessary to extend the length to 650 feet.

"Ladle Brick," by D. A. Moulton, Ames, Ia., was the title of the first paper presented at the Wednesday morning session. Mr. Moulton discussed the properties of clays and of the finished brick which result in the most successful ladle operations. The clays not highly refractory but very resistent to spalling, are best. Moreover, best results are obtained from brick made by the dry press process.

A. S. Watts Presents Paper

A. S. Watts, Columbus, Ohio, presented a paper entitled, "Heat Conductivity Data on Some Commercial Refractories." He described a new method for measuring heat transfer thru refractory material. In order of their greatest advantage from the standpoint of rapid heat transfer, the different types of brick are: fire clay, high silica clay, bauxite, silica, magnesite and chrome.

H. W. Douda, in his paper on the permeability and diffusion of gases thru refractories, pointed out that there was no relation between the per cent. of porosity and the rate of diffusion of air thru refractory materials due to the fact that the gas diffuses only thru channel pores.

Dr. Harvey discussed the properties which enter into the question of specifications for silica cement, fire clay, silica brick, and fire clay brick.

One of the most interesting features of the entire meeting was the question box which was inaugurated at this year's meeting. The session proved so interesting that an extra two hour meeting was called on Wednesday afternoon to complete the discussion. Besides those mentioned above, W. A. Hull,

D. Ross, E. W. Washburn, C. W. Parmelee, A. B. Christopher, C. W. Geiger, C. E. Bales and others entered into this discussion.

Among the matters discussed were such points as the design of a kiln for calcination of plastic fire clay to Cone 6 or 8, best time for burning silica brick, cheapest fuel to use in a rotary kiln, and other matters pertaining to the manufacture or use of refractories.

Terra Cotta Division

Delegates from both the Atlantic and Pacific Coasts were present at the Terra Cotta Division meeting. Altho this division did not have the large number of men present as did some of the others, its attendance of 37 was more nearly a 100 per cent. representation than any of the other divisions.

A. F. Hottinger of the Northwestern Terra Cotta Co., Chicago, presided, and E. C. Hill, of the Conklin-Armstrong Terra Cotta Co., Philadelphia, substituted as secretary in place of R. L. Clare, who was prevented from attending because of illness.

E. C. Hill read a paper dealing with results obtained from experiments on fire cracking of terra cotta. This work was a continuation of the investigations he made last year and presented at the previous meeting. The work represented a great amount of detail investigations, and was considered a very excellent contribution to the technical data relating to terra cotta manufacture.

Mr. Hill studied different types of clays with respect to their tendency to fire crack, and also different bodies on the same points. The range studied was from open burning to tight burning bodies. The clays studied were sandy and pure clay.

Rate of Cooling Responsible For Much Cracking

He tested the clays and bodies under quick and slow cooling conditions. The general results obtained showed that the rate of cooling of terra cotta in the kiln had much greater effect on fire cracking than did the body composition of the piece. He pointed out the fact that a clay which was sandy in itself did not mean it would tend to fire crack, but that the nature of the sand must be considered.

C. W. Hill presented a new view as to the cause of green staining on light colored burned terra cotta. He claimed that he obtained tests for iron from the stain collected from some of this material, and doubted that the green coloration was caused by vanadium, as has previously been attributed. Mr. Hill cited Seger on the point of green staining.

D. F. Albery called attention to the fact that most writers on this subject had missed the point in Seger's work. He cited Seger on green staining, which was caused by organic growth and gave proof of the finding of this growth and explained means for preventing same. Mr. Albery also stated that the surest preventative for this trouble is impervious slips.

Mr. Hottinger stated that he had made an analysis of green stain and found an appreciable quantity of vanadium present, and also doubted very much that the green scum on terra cotta was due to iron.

Discuss Pulsichrome Machine

The use of a pulsichrome machine for applying colors to terra cotta was given considerable discussion. This new process opens up a new field for terra cotta finishes, and has been received by architects with considerable favor. The process does away with a lot of uncertainty of matching laboratory samples, which has always been a problem heretofore. It produces more uniform results than have been obtained by the method of applying one spot over another. Mr. Gladding reported that some beautiful three-colored effects have been produced by his concern, by the use of a chrome glaze and a tin glaze applied on a terra cotta body with a pulsichrometer.

E. C. Hill reported the results obtained from a study of the effect of feldspar, powdered glass, cryolite, whiting, magnesia and other fluxes on terra cotta bodies. He determined the changes in shrinkage, absorption and strength produced by these fluxes and showed that it is possible to materially reduce the absorption and increase the strength of bodies by the addition of most of these fluxes.

R. H. Minton reported some data on similar experiments which showed results of a like finding.

Overcoming Shivering of Glazes

John L. Carruthers discussed methods used in overcoming shivering of terra cotta glazes. He gave some information on satisfactory results obtained by the addition of felsite to the body. This was a new thought in solving this problem.

In another paper presented at this meeting, Mr. Carruthers explained the application of forced draft to terra cotta muffle kilns, as introduced on the Denver Terra Cotta Co. plant. By the introduction of this system, very good results were reported as to burning conditions, time saving and fuel economy.

C. W. Hill aroused considerable discussion and interest in his suggestions on problems which should be investigated and which were pertinent to terra cotta manufacture. He covered points on every phase of the industry, and suggested that cooperative research be done along certain lines in the manufacture of this product.

Mr. Hill believes that terra cotta can be burned in a tunnel kiln without a muffle, thru the use of surface combustion with gas fuel.

H. E. Davis presented data he obtained by the study of additions of such electrolytes as sodium carbonate, sodium silicate, gallic acid and tannic acid, on clay slips made with Indiana No. 2 fire clay. He obtained negative results with gallic acid and very positive results with tannic acid, as regards fluidity and thickness of cast, but obtained discolored hard scum on the cast. He also tried a combination of sodium carbonate and sodium silicate. The best general results were obtained with sodium carbonate. Further work is to be done on this subject, as there is a possibility of using this process in manufacturing certain lines of terra cotta.

Paper on Good and Bad Shop Practice

An unusually good practical paper on good and bad shop practice in terra cotta manufacture was presented by T. A. Klinefelter. He gave interesting information on terra cotta pressing and showed slides bearing out his contention that considerable improvement can be made in the quality of terra cotta by a little more attention to the method of putting the clay in the molds. The presser should beat the clay well, so as to get a good welding of the sides of the face.

Mr. Klinefelter also showed a new method of putting partitions in terra cotta pieces, which is an improvement over the methods used heretofore.

He also pointed out advantages in wet fitting and referred especially to sectional columns and also suggested a new method of drying drum columns which produced better alignments.

The officers for the forthcoming year were those of last year, re-elected, and are: Chairman, A. F. Hottinger, Northwestern Terra Cotta Co., Chicago, Ill.; secretary, R. L. Clare.

* * *

ROTARY CLUB PUSHING PROSPERITY

The Rotary Club of America has recently started a campaign to promote prosperity by publicity work in all newspapers and other publications. Various slogans and suggestions for advertisements have been sent out, advising the public to "Buy, Build and Work," and to spread the gospel of better business.

Manipulating a Coal Fired Dutch Kiln

Article Number Three of Series on Setting and Burning in Up-Draft Kilns Treats on a Type of Kiln of Common Use in the East

By Elias Petts

IN TAKING UP THE SETTING and burning of the coal fired Dutch kiln, commonly used in the Eastern section of this country, it does not seem necessary to write a special article on the setting of these kilns, as the principles laid down in Article I of this series are applicable to this type of kiln as well as to the wood fired scove kiln.

In different localities, and even on some plants in the same locality, tho, there is such a diversity of plans for building these kilns that no iron clad rule can be laid down for setting the arches of these kilns.

There is, however, one principle common to all up-draft kilns which must not be overlooked, and that is, as stated in a previous article—the arches must be set so as to permit free passage of the heat from arch to body of kiln, and at the same time, to have the arches strong enough to sustain the weight of the kiln above them without damage to the arches themselves. This is not always easy to accomplish, but with a little thought it can be done, and as before stated, if the methods outlined in a former article are followed, an arch can be built very solid and at the same time give the heat ample space to pass up into the kiln.

Setting Brick Benches

The method of setting was for a four brick bench between the arches. We are aware that many coal fired Dutch kilns do not have over a three-brick bench, and some, 3⅓, or three-brick bench and a stretcher between.

In the accompanying sketch, we show how these middle brick should be set; the brick next to the fire should be set in the same manner as described in Article I referred to above.

We have shown two ways of setting the 3⅓ brick bench. Fig. 1 shows how it should be set if the brick are not too thick for their length; in other words, if they will set three on one, and still leave ample space between them for the fire, they should be set as in Fig. 1, with the stretcher running up next to the fire bench as high as the last tight course *under* the first overhanger, and they should be set with the ends close together, forming a cut-off between the first fire bench set up and the middle brick, with the exception of the two bottom courses of this stretcher which should be set about two inches apart on the ends, as shown in Fig. 3. If, however, your brick are too thick to allow sufficient space for heat when set as shown in Fig. 1, then set the third, sixth and eighth courses of the middle brick, as shown in Fig. 2.

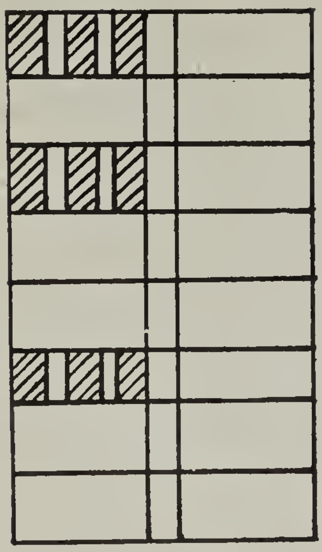

Fig. 1.

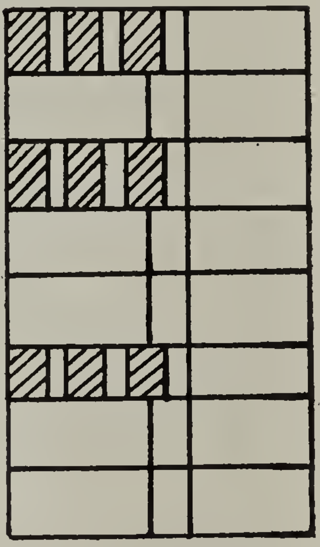

Fig. 2.

Cut-off Directs Heat Properly

You will observe that this does not make any break in your cut-off between each arch. This cut-off, we have found by experience to be a good thing, as it keeps the heat from stealing from one arch to another, at least, until it has passed up into the body of the kiln.

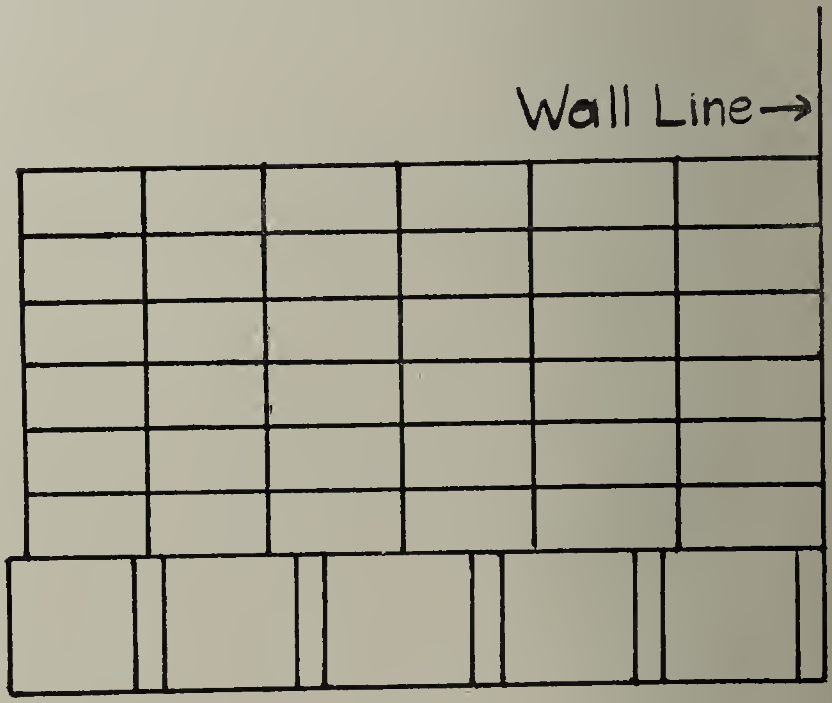

Fig. 3.

The reason for setting the two bottom courses apart is that the ashes will accumulate in the openings in these courses, and you need all the circulation you can get there.

Another thing—this stretcher should always go up, as above stated, next to the first fire bench set; this confines the heat in the first arch, which all burners know is the most difficult arch to burn, with the exception of the last arch which is the same as the other end of the kiln, and is the only arch in which the stretcher should be changed, when it should be set so as to confine the heat to the last arch; in other words, on the opposite side of the middle brick, as shown in Fig. 4. Of course, the fire bench which has no stretcher between it and the middle brick must be set in pairs to match the pairs in the middle brick; this allows the fire to pass in and up thru the stretcher behind the tight courses, which is not possible where arches are set in the ordinary manner by singling out each brick and breaking joints. This latter method of setting confines the heat too much, overheating the arches and often causing much damage that could be avoided by adopting this better method of setting the arches in up-draft kilns.

Setting Brick Highly Important

The setting of brick should be given as much thought as any part of the work in a plant, because if you obtain good burns with your brick improperly set, you would get better burns and accomplish this more easily if the setting was properly done.

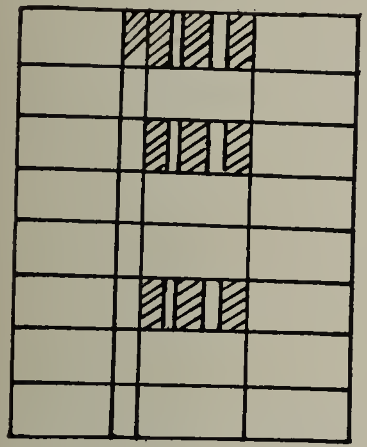

Fig. 4.

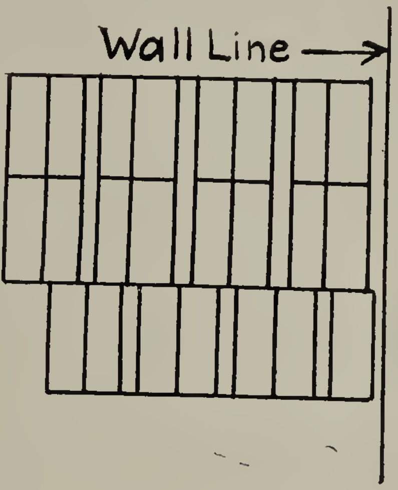

Fig. 5.

We are aware that there are some who set their benches in pairs, as shown in the accompanying sketches, but who follow this method only in a vague way, without knowing just why they set them in that manner. To illustrate this point, let me tell of a conversation that took place quite a number of years ago on the plant of a well known member of the trade in the South.

On the plant in question they were installing some new kilns, and some one made the remark that if the new kilns were not a success, it would not be the fault of the setting, as they had the best setter in the state. Another member of the party challenged the accuracy of the statement and ventured the assertion that the setter could not give a definite reason for setting the brick as he did, and to settle the argument that ensued they went into the kiln and asked the setter why he set the arches in that manner. His answer was that it was the only way to set them. This ended the argument until the new kiln was ready to set.

Know Why You Are Setting Brick in a Certain Way

When the builder, who also had charge of the setting and burning of the first kiln, explained to the setter how he wanted the brick set and why he wanted them set in that manner, then it was that the person who thought they had the best setter in the state approached the one who had challenged the statement and said, "You are right; this man has a reason for setting brick as he does, and he explains that reason to the setter. I have been on a brickyard for many years, and I have never heard that done before."

So here is the kernel of the whole matter—you must have a reason for setting your brick the way you do. If you have not, then ask yourself the question, "Why haven't I?" In other words, *have a reason,* and explain that reason to your setter, and secure his cooperation in setting your brick in the very best manner possible for your particular type of kiln, whether it be up-draft, down-draft or any other kind of kiln. You do not put brick in a kiln to fill up space—you put them there to burn into good, hard brick, and you want to do this in the best and most economical manner possible.

Fig. 5 shows the ground work of arch where the bench is only three brick wide. Set one fire bench to match the middle brick, and set the other fire bench so as to form a cut-off by placing each pair directly in front of the opening in the middle brick, as shown; this takes the place of the stretcher, as indicated in Fig. 1, 2, 3 and 4.

Leave Space Between Brick and Kiln Wall

Setting above the arch in this case is practically the same as described in Article I, except that the brick are set straight up against the wall, and not battered, as in the case of the scove kiln. The first 18 inches around the wall should be set a little looser than the balance of the kiln, to allow the fire to work up the wall.

Another too common error is that of letting the stretcher courses which run along the wall go directly against the wall; this forms a barrier and prevents the fire working directly up the wall. The stretcher should be kept one inch from the wall, and the headers should be directly against the wall, thus forming a small flue between each header, so that the fire can go directly up the wall, which assists in burning harder the ends and sides of the kiln.

Put on the platting as described in a former article by laying the first course one inch apart and across the top course of setting; then lay top course of platting across the first course and as close and tight as you can get it.

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INDUSTRY GAINING RAPIDLY

According to the Survey of Current Business, figures received up to February 20 show that the commerce and industry of the country as a whole made further gains during January. Consumption of cotton by mills increased from 511,800 bales in December to 526,552 bales, which is 160,000 more bales than the January, 1921, consumption. Building contracts awarded totaled $166,320,000 for January, which is a seasonal drop of about 16 per cent. from December, but is next to the largest January figure ever recorded in the 27 northeastern states covered by the F. W. Dodge Co. Reports on lumber production indicate an increase over December. Farm products showed a welcome increase in price. Wool, all live stock and all grains except rye shared in this advance. Receipts in shipments of corn were the largest recorded for many a month in recent years.

Conditions in the iron and steel industry were somewhat disappointing in January. Pig iron production decreased 10,000 tons compared with the December record, but steel ingot production was 200,000 tons larger. Structural steel sales were practically the same in January as in December.

The foreign trade of the United States declined in January. Imports dropped from $237,000,000 to $216,000,000, but even this figure is higher than the average for the 12 months in 1921. Exports declined from $296,000,000 to $279,000,000 and are the lowest for several years.

Federal bank reserves increased nearly $70,000,000, bringing the total well above the $3,000,000,000 mark for the first time.

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HOME EXPOSITION TO EXCEED LAST YEAR'S EFFORTS

For the first time in the history of the construction industry, modern department store sales methods will be applied to homes when the Second Annual "Own Your Home Exposition" opens in Chicago's Coliseum, March 25. In this exposition, the most complete building show to be held in the Central West this year, it will be possible for the prospective home owner to get a definite price, not only on the "beautiful home convenient," which will be the chief feature of the exposition, but on each and every home accessory essential to preparing the house for occupancy.

The Chicago exposition is a cooperative undertaking in which all the elements of the building industry are allied and this year its chief effort is to be prepared to say to the show visitor:

"You can build this house of brick, or lumber, or stucco for this amount."

Last year more than 100,000 persons visited the Chicago "Own Your Home Exposition." While it was admitted that the show far surpassed anything of a similar character staged before in Chicago, there was much criticism because exhibitors had no definite information to give out on actual costs and no one was prepared to sign a contract to build, for a specified price, the various home buildings for which plans were exhibited. This year it will be possible for the home shopper to buy his lot, select his material, arrange for his architectural service, get his contractor, agree on the landscape arrangement, and furnish the home complete from the laundry to the guest chamber, and sign a contract that will definitely indicate the prices.

The various departments of the exposition this year are: Architectural Service, Building Materials, Building and Loan, Savings and Thrift, Clay Products, Concrete and Stucco and Concrete Products, Heating and Ventilating Household Economics, Houses and Home Sites, Interior Decorating, Landscape Gardening, Lumber and Wood Products, Paint, Varnish, Glass, Wall Paper and Allied Industries.

The exposition opens Saturday afternoon, March 25 and closes Saturday evening, April 1, at which time many of the exhibits will be shipped to New York City for use in the home exposition there.

* * *

Excellent Program But Poor Attendance at Badger Meeting

QUALITY, rather than quantity in attendance, was the outstanding feature of the Wisconsin Clay Manufacturers' 21st Annual Convention, which was held at Milwaukee, February 28 to March 1.

In the opening address, President John Ringle gave a resume of the work that the Railway Committee has been doing since their last annual convention held in 1920. This committee has worked hard towards correcting the inequality of freight rates on clay products over competing materials and over former levels for the benefit of the entire industry in the state. A decision is expected from the State Railway Commission of Wisconsin in a very short time.

The first address on the program was by Ralph P. Stoddard, secretary of the Common Brick Manufacturers' Association, of Cleveland. He talked on the subject of "Proper Kind of Association." He showed the disadvantage that brick has had up to date on account of the lack of engineering data on properties of brick and masonry walls.

On the question of advertising, he explained that the C. B. M. A. receives 1,000 inquiries per month from the advertising placed in the Ladies' Home Journal and corresponding amounts from other mediums. It is his idea that since the A. F. B. A., H. B. T. A. and C. B. M. A. have started their advertising campaigns, 1,000 persons know of the qualities of brick construction where one was familiar with that subject previous to these campaigns.

H. A. Jung, commissioner of the National Clay Products Industries Association, with headquarters in Chicago, spoke very forcibly of the activities of the United Brick and Clayworkers of America, and showed by their own literature that they are contemplating enlarging their field and scope in the State of Wisconsin. He explained in detail the advantages, both to the owner and to the workman, of the American plan contract, as used by the members of his association. He explained further that this contract does not conflict with membership in any union, but is aimed to avoid any restriction on production by the concerted effort of an outside influence.

Splendid Talk on Dealer Question

The address of F. D. L. Squires, managing editor of Building Supply News, on the subject, "Selling Clay Products Thru the Retailer—Advantages and Disadvantages," closed the first session.

On this subject Mr. Squires said in part:

"The manufacturer has been too independent of the retailer. He will find it will pay him to consider the dealer as a definite part of his sales force.

"The tremendous hold of the lumber producer upon the lumber dealer is to a very large extent based upon intimate, personal acquaintance and friendship. The manufacturers of clay products would do well to study this fact and develop the idea in their own relations with the retailer. What one large manufacturer of clay products is doing for the dealer is worth epitomizing in this connection."

He gave in detail the successful methods used by large manufacturers, who market a large part or all of their output thru the dealer. This was very instructive to the delegates and aroused considerable discussion.

John J. Moroney, of the Chicago Brick Machinery Co., of Chicago, presented a paper on the use of oil in burning brick in up-draft kilns. He showed that this had been tried previously in Wisconsin, but on account of the small amount of air provided for combustion, the system had obtained a black eye. He explained that one big advantage in the use of oil permitted the kilns to be made from 40 to 45 feet wide instead of 24 to 26 feet, as is done when coal or wood is used. This wide setting assists in reducing the amount of fuel required for the burning. He explained in detail the amount of piping and fittings that are necessary to an installation for oil burning, and estimated that for a 20-arch kiln the cost would be not more than $2,000. For more than one kiln, the burners, which would amount to more than 50 per cent. of the cost, could be moved from one kiln to the other.

There was a very lively discussion about the method that should be used to interest the other manufacturers in the activities of the state association. It was shown that the association is more necessary at present than ever before on account of the freight rate question, the necessity of establishing uniform building codes in the different cities, and the benefits to be derived from the opportunity of using brick on the same basis with other building materials. It is certainly to be hoped that the next convention will find a very much larger attendance than was present this year. Those who did not attend lost or will lose more than their expenses would have amounted to.

Officers were re-elected as follows: John Ringle, Ringle Brick Co., Wausau, president; Samuel Gunther, Gunther Bros., Port Washington, vice-president; Oscar Zimbal, O. Zimbal Brick Co., Sheboygan, secretary, and Erwin Fricke, Wm. Fricke Sons Co., Manitowoc, treasurer.

Applying Engineering to Plant Design

Tells Why Engineer with Broad Knowledge Can Scientifically Lay Out a Model Clay Plant—Better Plant Means Better Profits

By Frank D. Chase

President, Frank D. Chase, Inc., Chicago, Ill.

SOME YEARS AGO the Chicago papers accused me of being an incendiary, specifically, of setting fire to buildings on the Chicago Lake Front.

The charge was a true one, as I was obliged to admit, and I received a good deal of criticism and some anonymous letters, one which I have treasured as a curiosity—and as a testimony to my standing in my profession (which is not incendiarism), for it was a threat against my continued well-being.

The occasion of my act, which was witnessed by several thousand people—was the burning of two cottages, one of wood and the other of brick construction, to demonstrate the superiority of brick as a building material.

I have always believed in the liberal use of brick, and it is a very great pleasure to meet and speak to all the real brick makers of the country, here assembled—

Engineer for 25 Years

I'm not here because I like to hear myself talk, but because I'm an enthusiastic believer in engineering and I never miss an opportunity to say a word for, or to advertise, if you please, the engineering profession.

A man who had always scoffed at advertising finally admitted to a friend one day that he was convinced that advertising brought results—his friend asked him what had happened to change his mind. He replied that he had recently advertised one morning for a night watchman, and that night his store had been robbed.

I've been doing engineering work for 25 years and I am grateful for the daily increasing recognition of the engineer. When mentioning that I'm an engineer, I'm no longer asked as to whether I run a stationary engine or a locomotive.

In speaking on engineering, I speak as an expert. My authority for that statement is an introduction given me by a chairman of a manufacturers' meeting in Des Moines, recently—I was made quite proud by his statement to that effect, until he again made it, with the further explanation, for the benefit of those who did not know—that an expert was a man away from home.

Applied Engineering

As I feel very much at home in Indianapolis, I shall not claim to be an expert. I'd rather talk about engineering as applied to brick manufacturing than brick manufacturing as applied to engineering.

You may remember the man who told his wife he was going to deliver an address on the Arctic Ocean—she said "You don't know anything about the Arctic Ocean"—"well," he replied—"neither does my audience."

I shall reverse this and play safe by not talking about the subject of which my audience knows more than I do. While I have not attended your conventions I am a brick man if there ever was one and my files contain nearly all of your annual convention reports.

I had really intended to get very technical, until I chanced on a statement—in your 1887 proceedings—that "no facts and figures should be given, the convention would not listen to them."

Seriously speaking, however, I know of no association meetings where more real constructive work is done than at the meeting of the N. B. M. A.

Shown World How to Use Brick

Not only have you the splendid articles on the practical phases of manufacturing, but you have the technical and engineering papers which deal with the chemistry and technology of clay products. You have not only told the world to "Build with Brick"—but you have shown them how. One valuable thing which means millions of dollars saved to this country annually, you can assist thru your willingness to cooperate with the National Fire Protection Association, and its able leader, Mr. Franklin Wentworth of Boston.

The engineering work of the N. F. P. A. which Prof. Woolson directs largely, is a benefit to the brick manufacturer in so far as brick should be used.

The old order of things has passed away and industrial America today is at the threshold of a new era of domestic and world commerce and competition.

The war speeded up all industry and the engineer was called upon, by warfare, to develop new processes, new materials, new products, to utilize waste, to conserve labor and all industry has benefited thereby. Perhaps the only item on the credit side of the war, and the price was a terribly high one, is the increase in the knowledge of the arts of peace, gained in war.

Clay Industry Rapidly Progressing

Every industry was benefited by the speed and progress inspired by the war, and those individuals who have refused to keep up this pace and keep up to date, will be lost in the dust of their more progressive competitors.

Familiar as I am with many industries, I know of none where more progress is being manifested than in the manufacture of brick.

Not many years ago men and mules were most in evidence in the "brick yard." Today the modern brick manufacturing plant is well laid out, well equipped and well operated, and it is the ambition of every manufacturer to say this of his plant.

It is said that there is nothing new under the sun—and I certainly shall say nothing that is startling or original—in fact, it all sounds quite obvious as I say it—but very few plants will measure up 100 per cent. on a check of every item, and we all will think of examples where the sensible thing to do was not done. These things must be thought of in a logical and comprehensive way, if a plant, new or old is to succeed.

Editor's Note—Paper read at National Brick Manufacturers' Association Convention at Indianapolis, January 26, 1922.

Here Enters the Engineer

The problems of the beginning or continuation of the modern plant number four:

1. Location.
2. Layout.
3. Design.
4. Operation.

Location is the first consideration and its factors are:

a. Market.
b. Raw Materials.
c. Transportation.
d. Labor.
e. Fuel, Water and Power.
f. Site.

Reviewing these briefly we have:

First, Market.—To determine what the market is, means a survey of demand and supply, demand being the amount and kind of building operations. In a district where frame houses are the rule, due to a low cost of wood, supplemented by a supply of cheap building stone, brick will not be as much in demand, as where timber and stone are expensive. Brick for pavements must compete with cement. The consumption of the product, and its future possibilities must be analyzed, together with existing supply. The last place in which to locate is in a community supplied by a sufficiency of modern efficient plants. Chicago, for example, is a community which, while its demand for brick is enormous and still growing, is too well served by the modern plants of the Illinois Brick Co. and others to encourage the investor. And, too, I know, for I have heard Mr. Schlake say so many times, that no one makes any money making brick in Chicago. I've been tempted many times to use materials other than brick just to save losses for Mr. Schlake's company.

Market Must Be Carefully Determined

Conversely nothing is so attractive to the investor as a community which is supplied only by plants which are not sufficiently modern to meet new plant competition. I know of several communities which have been selected as sites of new plants, because competition is not feared.

Having determined a market thru careful analysis the next item (b) Raw Materials—must be reviewed. Clay or shale must be located—and intelligently located, sounded, and tested. This means proper borings by an engineer who knows the geology of the district, and can interpret it for the brick manufacturer. Suffice it to say that millions of dollars have been wasted that might have been saved by the expenditure of a few thousands for engineering in analyzing and testing raw materials. In no other fashion is it possible to determine what the character of the finished products will be; the kind of raw material found will enable one to determine exactly the ware to be manufactured. In fact, a definite knowledge of the raw materials may permit a much broader scope of manufacturing if definitely known, making larger profits possible. Possibilities in this direction are too numerous and too obvious to mention. The quantity is as essential as the quality and many a plant has been prematurely abandoned because of an unforeseen exhaustion of the supply. You must *know* as surely as it may be determined, that you have the proper materials in quality and quantity before you consider their manufacture, and not only is the primary object of locations affected but, to the later consideration of proper equipment. The kind of material must be known to a certainty, if proper equipment is to be bought.

Transportation

(c) Transportation is the third location consideration. The zone of profitable distribution is easily determined and the market within that zone can be estimated. Because of the ratio of freight to total cost of brick, it is a more important factor than in many industries. Many seaboard manufacturing plants are today struggling unsuccessfully against high freight rates to a western market. The brick manufacturer must know that he can market his product at a profit. This means not only railroads, but the right railroads and the selection is not always dependent on freight rates.

(d) Labor—the fourth factor is not as important as at one time because of its decrease due to the installation of modern equipment and in most communities there is labor to be had.

The silk mill and foundry operate in our large cities, but the location of each must take into account the supply of the right kind of labor.

(e) Fuel, water and power must be provided, and at costs which will not be prohibitive.

Fuel and Water Highly Important

I could talk for an hour on this subject alone—we know it is often neglected, and more than one plant has been abandoned or put to large expense because of lack of knowledge of these things. The right kind of fuel or water is sometimes as serious a problem as power. I have read in your transactions many able papers, presented to this association on these subjects. The analysis of fuel, water and power supply and requirements is a very technical one.

(f) Site. The last of the location factors, includes many of the others, before mentioned, or they must be satisfied in the site. That is, the market must be reached at the proper cost, by proper transportation, of the right kind of raw materials, and handled with plentiful and cheap labor. Beyond this, the site must permit of the layout of the modern plant—with adequate areas for the initial requirements of clay storage, dryers and kilns, machine house, and power plant, ware storage and shipping—and for the expansion of these units to meet future requirements.

Plant location then, is the subject of a broad comprehensive engineering analysis, which must be made, and well made to insure that this first step is rightly taken.

Layout and Design

The layout of the plant, as distinguished from its design, is a production problem, i. e., the problem of manufacturing brick at the lowest cost. In my work, I find that the study involved in the analysis of location and layout is frequently as involved as that of design of structure and equipment.

The proper layout of poorly designed structures and equipment and the poor layout of well designed and built structures and equipment are equally inexcusable—and therefore the proper layout of well designed and built structures may be considered briefly as a single subject. This problem, in the new plant, is usually simpler than in the old, for there is seldom the handicap of the existing structures to contend with.

But, new or old, the plant presents 10,000 opportunities for skill, ingenuity and last but emphatically not least, common sense, on the part of an engineer.

Plant layout involves as we all know:

1. Storage of raw materials.
2. Handling of raw material to the first machine, be it pan, granulator or pug.
3. Machine room operation.
4. Drying.
5. Burning.
6. Storage and shipping.

Any analysis of these would be out of the question and beside the question—but I'm going to hit a few high spots as the engineer sees them, with a little recent help from the outside.

Mining and Storage

The mining and storage of raw materials and its delivery involves methods and equipment which are in themselves a big industry. The steam shovel, alone, as one kind of equipment, has many types, each one adapted to a particular soil or excavation problem. The handling of material to storage involves not only equipment, but power problems.

Storage, now becoming a necessity to reduce carrying of stocks and improve condition of the material, involves a different kind of material handling problem. There are many ways of solving this, depending on time, amount, and location of the stock pile.

Machine room operation involves not only power equipment and its proper maintenance, but the proper power supply.

Drying involves proper insulation and reduction of heat losses as does burning. A. V. Bleininger, formerly of the United States Bureau of Standards, has made tests which roughly figured a loss of 75 per cent. of the fuel value in burning. Instead of $2 or $3 assume a loss as little as 50c, and in a 100,000 capacity plant that is over $18,000 per year, which will buy considerable insulation. How many brick plants are using modern methods of insulating, dryers and kilns?

Quotes Brick and Clay Record

Utilization of waste heat goes hand in hand with insulation as a cost reducer and few people know anything about the subject. And all thru the plant are involved the problems of conveying or transportation of materials.

A recent supplement of the "Brick and Clay Record" describes the remodeling of the plant of the Bradford (Pa.) Brick & Tile Company—and also says editorially what I might personally hesitate to say, that "The story is one that could just as well apply to nine out of ten other clay plants where the management has the vision, courage, ambition and good business sense equal to W. L. Hanley, Jr., the manager." "There is need in the clay industry for a great deal of junking of obsolete and worn out and inefficient equipment and the rebuilding of factories to permit lower production costs." "Reduction in production costs is the cry of the present industrial period." "However, there are too many plant owners who are under a misapprehension and who feel that because their plant is an old one and not constructed along modern lines, or because its layout is not the best, that they cannot consider the matter of remodeling their factory and installing cost saving equipment," and the last line of the heading reads "All net a remarkable reduction in production cost of over seven dollars a thousand." Mr. Hanley was an engineer as well as a brick manufacturer and he did among other things, what every engineer does and in fact his opportunity and ability to do so are his biggest assets; he borrowed ideas from other industries.

Design Model Sausage Factory

Last summer we designed a model sausage factory, and we designed a sausage dryer which has been extensively commented upon, which prolonged the salable life of sausage just 100 per cent.—the engineer who did this had never seen sausage made but he knew how to make brick and his brick drying experience enabled him to design a good sausage dryer.

A large ice cream plant had a deficit of $300,000 in 1920—this we turned into a like profit in 1921, by the knowledge of our refrigeration engineer who had never designed an ice cream plant.

The conveying equipment of the shell plants and the material handling of the ship yards which we designed during the war were easy problems, because of our knowledge of equipment used in other industries. There is no equipment in any kind of a plant that gives more trouble than conveying equipment.

An engineering organization with 400 or 500 years total aggregate experience in many plants in many lines of industry borrows successfully from one industry to serve another. Other points of interest mentioned in the Bradford plant description include increase of No. 1 ware from 60 to 95 per cent. of output.

Plants Could Be Made More Profitable

I'll say that there is not one plant out of ten in the brick industry or any other industry in this country, with the possible exception of the steel and textile industries, which have the advantage of many years of development and concentration of large capital, where capacity could not be increased and pay 50 per cent. earnings annually on the capital investment in such improvements. This statement is based on a personal knowledge of hundreds of plants of all kinds.

Scrapping of equipment is a thing which most manufacturers hesitate over. Scrapping equipment is justified for two reasons only. First, because it is worn out and this often means that, as in the case of dies, and so forth, delay to replace increases cost of production and this can easily be determined. Second, because it is obsolete. The use of old vs. new equipment can be very accurately determined if one wishes to take the trouble and time to get the facts. Mining, excavation, storage, burning, drying, conveying, insulation, power and power transmission, mixing, grinding, transportation, all are the subjects of years of study and too, of recent engineering standardization and must be passed over for a closing word.

Engineer Necessary in Designing Clay Plant

The article describing the Bradford plant closed with a list of firms supplying principal equipment for the plant. The list numbered 43 names with a lot of equipment not selected.

Mr. Hanley was, as I've said, an engineer and he dealt with these 43.

The owner of a plant in Illinois told me recently he never made any money until he got an engineer for a son-in-law. This young man helped rebuild and modernize his plant. What I've been leading up to, and submitting proof to substantiate is this, that you can't economically lay out a modern successful low cost and low production cost plant without an engineer. It is a splendid thing to raise one—then you have him in the family—almost as good a way would be to obtain one by marriage and if you can't do either, hire one to work *with* you—*with you,* I said, not for you—for an engineer can only succeed when he and his client make a team. The engineer does not supplant, he merely supplements his client's experience and knowledge. But,—and here is where I'm going to get in bad for a moment, he does supplant the equipment manufacturer.

Clay Plant No Longer a Simple Thing

For many years the equipment manufacturer has furnished the information for plant layout and design and incidentally and logically has included his own equipment. That has been entirely and absolutely legitimate. The modern plant is no longer the simple thing of 20 years ago —Mr. Hanley dealt with 43 manufacturers—which one of the 43 would you go to today, for your complete layout?

Do not misunderstand me. The present advanced state of the art of clayworking is due primarily to the manufacturers of equipment and they deserve much of the credit. They have built the machines, the kilns, the dryers, the equipment to meet your requirements, and it was their knowledge of what the other fellow had done, that enabled them to help you. Many times have they stood the cost of their failures to meet your requirements, but they stuck, and the perfected equipment you use today is the result of their investment in time, money and effort.

Clayworking Field More Complex

Things have, however, gotten a bit too complex—and I find it not only interesting and gratifying, but of very great justification and help to receive, in the clayworking field as in other industries, the cordial cooperation of the equipment manufacturer.

The modern spirit of salesmanship and service prevents the selling of equipment that will not function perfectly and the manufacturer welcomes anyone who can coordinate all of the plant layout and equipment problems so that he will know that his equipment will fit into the general plan.

Another thing, when it comes to dealing with 43 makers of equipment and analyzing all of the details which go to make up each line which is figured on, one finds a long list of gaps, overlaps and misfits. Some of these are discovered just about the time the plant is ready to operate. It is the province of the engineer to reduce each separate line to be purchased to a clear cut plan and specification: (Let me illustrate—powdered coal—fuel oil—conveying equipment.)

Put Competitors on Equal Basis

This puts all competitors on the same basis which permits of intelligent comparison of all bids, and letting of contracts, a thing welcomed by the honest manufacturer. There is an obligation on the other side, too. The manufacturer who buys on price alone, seldom buys wisely, nor does he who tries to beat the manufacturers by sharp practices. The engineer who receives any commission from others than his client is a crook, pure and simple. Fortunately he is a rare bird these days—ought to be a jail bird—and his species is getting very scarce. There is not much room left in this country, nor much chance for success, for crooks.

The parties to a successful plant are three—the brick manufacturer, the equipment man and the engineer, with cooperation between all.

I'll repeat what I said at the start, that I've said nothing original—but I know that the complete and logical analysis of your plans, by the engineer, as above outlined leads to successful—i. e., profitable manufacturing.

Patent on New Tile Sustained; Litigation Cleared

THE RECENT DECISION of the United States Circuit Court of Appeals, Ninth District, at San Francisco, Cal., in the case of Health Unit Tile Co., Appellant, vs. American Fire Brick Co., Appellee, sustaining the claim of patent issued to Frederick Heath in 1917, No. 1,215,149, is of much interest and importance to clay manufacturers on account of the issues involved, the far reaching effect of the litigation and because of the complete vindication of the patent claims of the appellant.

In 1918 the Heath Unit Tile Co. brought suit in the United States District Court against a Portland, Ore., manufacturer for infringement. The decree was unfavorable to the Heath Co., the court ruling there was no infringement and that the patented construction did not constitute invention, because in the opinion of that court, it involved mere mechanical skill. This was followed by another suit brought by the Heath Co. in 1920 against a manufacturer at Spokane in another United States District Court. The charge against this manufacturer was contributory infringement, with joint action against an apple storage warehouse company at Yakima, Wash., the latter having purchased tile from the Spokane manufacturer to build the walls of its warehouse. In this case infringement was proven, but the Spokane court followed the decision of the Portland court. Both these district courts are in the Ninth Federal Circuit.

Appeals Court Reverses Decision

In 1921 the Heath Co. appealed to the United States Circuit Court of Appeals for the Ninth Circuit, sitting at San Francisco. This court on February 6, 1922, reversed the decision of the lower court, sustaining the patent, granting a permanent injunction and awarding an accounting for damages with costs.

In the Portland case evidence by deposition was given by men most prominent in the tile interests in the United States, and at the trial a large number of witnesses for the defense were produced. In the Spokane case the appellee submitted and the court considered the entire testimony of the Portland case. This in a sense resulted in a re-trial of the Portland evidence, and brought the full issue and the records of both lower court cases before the Court of Appeals at San Francisco. The case was prosecuted primarily against the manufacturer as contributory infringer, to establish the legal status of manufacturing and selling the tile to the trade; the purchaser of the tile, who builds it into an infringing wall structure, being of course also liable.

Patent Is Held Valid

Going back in the history of this invention, the patent application was carried thru the various appeals before the tribunals of the patent office, and finally Heath appealed the claims asked for to the Court of Appeals of the District of Columbia at Washington, D. C. This court reversed the ruling of the Commissioner of Patents, and ordered the patent issued.

The United States Circuit Court of Appeals now reverses the decision of the lower District Court, sustains the decision of the Court of Appeals of the District of Columbia, and holds the patent valid. The San Francisco Court of Appeals is one of the nine such courts which are the highest courts available in such patent cases, as under the present rules of the United States Supreme Court, it allows appeals to it in patent cases, only under unusual circumstances. In the decision mention is made of several well known tile constructions, patents on which were submitted by the appellees in evidence, showing the state of the prior art, and defining their scope and distinctions very clearly.

Heath Tile New in East

Altho Heath tile are comparatively new in the Middle West and East, they have been manufactured on the Pacific Coast for about four years.

It is claimed for the Heath system of wall construction that a new field for the use of hollow tile is being opened and furthermore that it solves the present day problem of a lesser cubic foot of wall cost.

Among the Pacific Coast licensees are the Los Angeles Pressed

Brick Co., N. Clark & Sons and the Denny-Renton Coal & Clay Co.

The patent rights for the territory east of the Pacific States has been granted the Heath Tile Co., which has opened offices in the Merchants Loan & Trust Bldg., Chicago. A very comprehensive plan of promotion has been adopted and rapid steps are now being taken towards the fulfillment of them.

Sales Plans

Briefly these plans call for a general sales organization directed from the Chicago office. The territory will be divided into districts, each having several selling offices. Manufacturing arrangements will be made in each district which contemplates the contract of manufacture, the lease or purchase of plants.

Carl C. Walters, who has been identified with the clay industry for more than fifteen years and who has had several years' experience with Heath tile on the Pacific Coast, is the general manager of the company and is directing the manufacture and selling program.

The Health tile wall construction was invented by Frederick Heath, an architect of the Pacific Northwest. He has been an advocate and user of hollow tile since its first introduction. His intimate association with the use of hollow tile led to the development of the Heath units and system.

The company has already concluded arrangements for the state of Arizona and New Mexico and the seven Dixie states. The former field will be covered by the Tucson Pressed Brick Co., which has recently completed a very modern factory at Tucson. The Dixie branch will be known as the Southern Brick & Tile Corporation, with headquarters at Atlanta, from which several sales offices have already been opened. A. J. Bohn and J. J. Cantwell, two well known hollow tile engineers, are in charge of this field.

* * *

REFRACTORY SALES PICKING UP

A slight opening up in the refractory market has been noted, and it seems there is a tendency for buyers to discontinue single carload lot buying, and to enter more substantial orders. Indications are now that February will be the best month since 1920 in volume of sales. Silica brick shows the greatest activity, but there are also some fire clay brick being sold. The outlook now is that 1922 will show three or four times the volume of sales as the previous year. The following prices are listed in the Iron Trade Review of February 23:

Fire Clay Brick (Per 1,000 f. o. b. works): Pennsylvania, No. 1, $32 to $35; Pennsylvania, No. 2, $28 to $32; Ohio, No. 1, $32 to $35; Ohio, No. 2, $28 to $32; Illinois, No. 1, $32 to $35; Illinois, No. 2, $30 to $35; Kentucky, No. 1, $32 to $35; Kentucky, No. 2, $30 to $32; Missouri, high grade, $34 to $40; Missouri, No. 2, $30 to $34; Maryland, No. 1, $32 to $40; Maryland, No. 2, $27 to $30.

Silica Brick: Pennsylvania, $30; Chicago, $35 to $38; Birmingham, $40.

Magnesite Brick (Per net ton seaboard base): 9x4½x2½, $53.

Chrome Brick (Per net ton): 9x4½x2½, $40 to $43.

* * *

CURRENT PRICES ON COAL

Southern Illinois, including Franklin, Saline and Williamson Counties, domestic sizes, $3.10 to $4.05; mine run, $2.75 to $3.50; screenings, $1.85 to $2.85; steam sizes on contract, $2.60 to $2.85.

Indiana, prepared sizes, $3 to $4; mine run, $2.25 to $2.50; screenings, $1.40 to $2.05.

Central Illinois, prepared sizes, $3 to $3.50; mine run, $2.25 to $2.75; screenings, $1.50 to $2.25.

Peoria district, prepared sizes, $3 to $3.50; mine run, $2.65 to $2.80; screenings, $1.60 to $2.25.

Spring Valley, six-inch chunks, $4.50; on contract, $4.25; washed screenings, on contract, $3.85.

The price of slack stiffened a bit in the past week in the Cleveland, Ohio, market. No. 8 steam slack, f.o.b. No. 8 eastern $1.60 to $1.85; mine run, $2 to $2.10; three-quarter-inch lump steam, $2.15 to $2.50; one and one-quarter-inch lump, steam, $2.50 to $2.75; domestic lump, $3.00 to $3.40; and a three-inch lump, $2.85 to $3.15.

Prices in the Columbus, Ohio, market continue to be well maintained in the face of light demand. Hocking lump is $2.50-$2.75; Hocking mine run, $1.75-$2.50; Hocking nut, pea and slack, $1.25-$1.50 f.o.b. mines.

Spot quotations at Kentucky mines show northeastern Kentucky, lump, $2.50; mine run, $1.40 to $1.60; screenings, $1 to $1.25; southeastern, lump, $2.25 to $2.75; mine run, $1.50 to $1.65; screenings, $1.10 to $1.30; western Kentucky, lump, $2.25 to $2.75; mine run, $1.70 to $2; nut, $1.75 to $2.10; nut and slack, $1.25 to $1.60; pea and slack, $1.15 to $1.35.

The following prices are being asked in the Detroit, Mich., market:

Four-inch lump from West Virginia is quoted at $2.65 to $2.75 at the mines; two-inch lump, $2.15 to $2.25; egg, $2; run of mine, $1.50; nut and slack, $1.35. Ohio three-inch lump is quoted at $2.85; inch and a quarter lump at $2.50; egg, $2.15 to $2.25; run of mine, $1.85; nut and slack, $1.40; Pittsburgh No. 8 inch and a quarter lump is $2.35; run of mine, $1.90 to $2; slack, $1.65 to $1.75. Smokeless lump and egg, $3.25; mine run, $2; nut and slack, $1.50—*Black Diamond.*

* * *

REFRACTORIES ANNUAL IN CHICAGO

The ninth annual meeting of the Refractories Manufacturers' Association will be held at the Drake hotel in Chicago, Ill., on Wednesday and Thursday, March 15 and 16. All manufacturers of refractories regardless of membership affiliations, are invited to attend the meetings and take part in the discussions.

This association was organized March 5, 1913, in Chicago, at which time ten manufacturers met to plan an organization in the refractories industry. The following day, officers were elected and a constitution and by-laws were adopted. At the close of the meeting 15 manufacturers were included in the membership. Today, the membership has increased nearly seven fold in nine years, the present list being well above the hundred mark.

* * *

UNITED STATES EXPORTS EXCEED IMPORTS

The total export trade of the United States in 1921 was 45 per cent. less than in 1920, in dollars. In quantity, the decrease was negligible. The export trade of 1921 exceeded by 90 per cent. that of the highest pre-war year. The excess of exports over imports in 1921 was approximately $2,000,000,000 and in the largest pre-war trade year, 1913-14, it was less than $500,000,000. The balance of trade in our favor was more than four times as large in 1921 as in any pre-war year.

Yet the international financiers have been trying to make the country believe that the depression in the price of farm commodities was due to the failure of foreign countries to buy.—*Manufacturers' Record.*

* * *

NEW CANADIAN BRICK AND TILE COMPANY

Surrey Brick & Tile Co., Ltd., 309 Rogers Bldg., Vancouver, B. C., has been incorporated with a capital of $30,000 to manufacture brick.

Accounting to Eliminate Waste

Estimating Costs in Various Departments to Eliminate and Fix Responsibility for Waste—Insures Greater Efficiency in Departments

By G. W. Greenwood

Treasurer, United Refractories Co., Dunbar, Pa.

COST FINDING, in the minds of many people, consists in a process something like this:

Take all the direct and indirect operating charges for a given month, all the time measured elements, the cost of time idle as well as time operating, together with all other factors, relevant and irrelevant, pertinent and impertinent, dump them all together like a dog's breakfast and then—then divide by the amount of green brick molded during the month! Concerning this process, the writer stated in a paper presented at the organization meeting of the Refractories Accountants Institute:

There is no time here and now to comment upon this method, save to state that it is *antiquated, inaccurate, erroneous, misleading, fallacious,* and probably not worth the time taken to compile the results.

An accountant who follows this method will have, and deservedly should have, a hard time convincing anyone that his services to the company are indispensable.

Purpose of Cost Accounting

The purpose of all cost accounting is:

The Elimination of Waste, and the Reduction of Costs, by Means of Modern Accounting Methods.

To eliminate waste, it is necessary to reveal it and to fix responsibility for it. Right here, most cost systems fail.

When one states that a charge is low, or high, he has, or should have, a normal or standard charge which is assumed as a basis of comparison.

Consider the various elements of labor cost—molding, setting, burning, drawing and loading, drawing and stocking, loading from stock.

The quantity molded must be used as a basis for determining the reasonableness of the molding cost, regardless of the number of brick so molded which are afterwards set. And the number set is the basis for establishing the normal setting cost, no matter how many or how few of these ever are loaded for shipment. And so on thru the list. The loss by breakage or otherwise thruout the various processes is to be taken care of in an entirely different manner. For this purpose, in addition to the setting of reasonable standards for labor costs, minimum standards for breakage should be adopted.

A Simple Example

Let us consider a simple concrete example, where a plant is making only one refractories product—for instance, nine-inch straights or nine-inch series shapes by a single process. Assume the following as normal labor costs:

Molding	$5.00
Setting	1.20
Firing	1.00
Burned brick handling	.80

Next we assume minimum standards of breakage as follows:

Loss in drying	5 per cent.
Loss in burning	3 per cent.
Loss from stocking	1 per cent.

This makes a total loss of something less than nine per cent. of the amount molded—not exactly nine per cent.

Consider the various departments as tho they were in charge of different individuals, each selling his product to the next at a price such that he will break even if the assumed standards are achieved. If any department makes a better showing than the standard adopted, it will show a profit, regardless of the showing made by any other department. Thus efficiency in any quarter will receive recognition and waste will be checked

How Cost Mounts

Let us assume that these departments are in charge of A, B, C, and so forth. A, who has charge of the molding, produces 1,000 brick at the standard cost of $5 for direct labor. Of these, 50 are lost and he therefore must sell the remaining 950 to B for $5.26316. (In actual practice one would not carry the result this far, but in these illustrative examples it is desired to have accounts balance up as nearly as possible).

Of the $5.26316 received from the sale of his product to B, he credits $5 to his cost of molding and credits the remaining $.26316 to a reserve to which is carried the direct labor cost of the brick lost in drying.

Let us first consider the entries involved where an initial amount, say 400,000, is carried thru the various processes and is all shipped (except for those lost) within the period covered by the accounts.

This will be followed by examples wherein the losses vary from the assumed standards, then where the direct labor costs are at variance, and finally where there are final inventories to take into consideration at the close of the period. To begin with, A's account will be as follows:

A. MOLDING COST

Cost of Molding		Sold to B,	
400,000 brick	$2,000	380,000 brick @ $5	$1,900
		Lost	
		20,000 brick @ $5	100

RESERVE FOR LOSS IN DRYING

Lost		Sold to B,	
20,000 brick @ $5	100	380,000 brick @ $.26316	100

This work is simple enough, and does not require very much time. But even if it appears complicated, what would you do if you were in A's shoes? Would you not require this information for your own benefit and guidance if you had contracted to supply the direct labor for molding and to furnish the brick to B at the price stated? Would you not make every effort to keep the loss below five per cent., knowing that every thousand salvaged is a profit of over $5?

Detailed Information Necessary

And if this all be true, are the circumstances in any way altered if you also occupy the shoes of B, C, and so forth? In fact do you not all the more need this detailed information covering each department when you have so many to keep track of that personal touch is impossible?

B. SETTING COST

Bought from A		Sold to C	
380,000 brick @ $5.26316	$2,000	380,000 brick @ $6.46312	$2,456
Cost of Setting			
380,000 brick	456		

Thus B sells the product to C at a price to cover the cost to him, plus the standard setting cost of $1.20. C buys the brick, set in the kiln, for $6.46316 a thousand. He incurs an additional cost of $1 and loses 30 out of the thousand. At what price per thousand must he sell the remainder in order to square his accounts? Dividing $7.46316 by .97 we get $7.69398, of which $7.46316 covers the cost of the brick which are actually sold to D, the remainder of $.23082 being credited to a reserve to take care of the loss. C's accounts will therefore read thus:

C. BURNING COST

Bought from B		Sold to D	
380,000 brick @ $6.46316	$2,456	368,600 brick @ $7.46316	$2,750.92
Cost of Burning		Lost	
380,000 brick	380	11,400 brick @ $7.46316	85.08

RESERVE FOR LOSS IN BURNING

Lost		Sold to D	
11,400 brick @ $7.46316	$85.08	368,600 brick @ $.23082	$85.08

In the present case we are not making any allowance for resetting and reburning.

Cost of Stocking and Loading

D buys the brick from C, as they are in the kilns, paying for them $7.69398 a thousand, he pays 80 cents to put them into stock, and 79.2 cents for loading the remaining 990 brick on cars. This is on the basis of a loss of one per cent. Adding these three amounts and dividing by .99 we get the price at which D must sell them to E, the sales department, $9.37978. Of this, $9.29398 applies to the price paid by D, plus drawing, stocking and loading. The balance, $.08580, is credited to the reserve.

D. HANDLING

Bought from C		Sold to E	
368,600 brick @ $7.69398	$2,836.00	364,914 brick @ $9.29398	$3,391.50
Cost of Stocking		Lost	
368,600 brick @ $.80	294.88	3,686 brick @ $8.49398	31.31
Cost of Loading			
364,914 brick @ $.80	291.93		

RESERVE FOR SHED LOSS

Lost		Sold to E	
3,686 brick @ $8.49398	31.31	364,914 brick @ $.08580	31.31

We are here assuming that all brick are drawn and stocked, then loaded for shipment. When brick are loaded directly from the kiln, quite a simple method will be suggested for accounting for the reduced cost. But we wish to take the simplest cases first. We finally have the following entry:

E. SALES

Bought from D	
364,914 brick @ $9.37978	$3,422.81

By recapitulating, we get the following as the direct labor charged in the above accounts:

Molding	$2,000.00
Setting	456.00
Burning	380.00
Drawing and Stocking	294.88
Loading	291.93
Total	$3,422.81

This total agrees with the direct labor charge against these departments on the general books of account for the period. Apart from this there is no connection between the work of the bookkeeper and that of the cost accountant.

Each Department Can Reduce Cost

This total is also, in the present case, the amount charged to sales, "E." This would happen only when all standards are exactly met and when there are no brick left in any department (except when the two amounts agree by accident).

Now the object of each man in charge of a department is to reduce his share of the above direct labor cost, and to keep his losses lower than the standard set. He is encouraged in this by the knowledge that he will not have passed on to him the failure of any previous department, neither will his savings be presented, gratis and without acknowledgement, to the next department.

A following article will be a consideration of the same problem except that the standard losses differ from the actual losses, showing how to account for these differences.

* * *

KANSAS CITY HAS "BETTER HOMES" SHOW

The thing that most surprised the hundreds of people who were given information at the booth of the brick men at the recent Better Homes and Buildings Exhibition at Kansas City, Mo., was the fact that the "better homes" built of brick would cost only a fraction more than the other homes built of less permanent materials.

The purpose of the Better Homes and Building Exhibit, held at the Convention Hall, gave a dozen of the firms of Kansas City interested in the sale of the better building material an opportunity to give a demonstration of their products, and to disseminate information as to the relative costs, and so forth. The exhibit was attended by over 90,000 people, and besides the people who stopped to examine the exhibit of the brick men, there were thousands who carried away the literature that was handed out at the display.

The display, which was among the most attractive on the floor, and which had a central location, showed the usages of face and common brick and hollow tile, in actual building construction. Included in this exhibit was a practical demonstration of the building of the Ideal wall, and the effect of different colors of brick was demonstrated by panels laid in actual mortar of different colors. The different bonds were also shown.

A folder was put out in the name of the firms exhibiting to show that the brick house is the "Better Home," and the kind that the home builders should erect. The title of the folder is "Facts on Better Home Building," and it sets forth that this better home should be better from the standpoint of economy, durability, safety, comfort, and beauty.

The firms cooperating in making the display, and in getting out the literature were:

B. W. Ballou, Kansas City, Mo.; C. A. Brockett Cement Co., Kansas City, Mo.; Builders Brick & Mfg. Co., Kansas City, Mo.; Coen Building Material Co., Kansas City, Mo.; Godfrey & Stimson, Brick Mfgs., Rosedale, Kas.; Hydraulic Press Brick Co., Kansas City, Mo.; Humboldt Brick Mfg. Co., Humboldt, Kas.; Kansas City Brick Co., Kansas City, Mo.; Lumberman's Supply Co., Kansas City, Mo.; Lyle Rock Co., Kansas City, Mo.; Nicholson Clay Products Co., Kansas City, Mo.; Reliance Brick Co., Kansas City, Mo.; Shale Hill Brick & Tile Co., Chilicothe, Mo.

* * *

FORM BRICK CONTRACTORS ASSOCIATION

An interesting association from the point of view of the brick manufacturer has just applied for a charter to the court of Allegheny County, Pa. The name of the association is to be "The Brick Contractors Association of Allegheny County." The character and object of this association is the encouragement and protection of trade and commerce and for that purpose to inculcate just and equitable principles of trade; to establish and maintain uniformity in commercial usages so far as they relate to the brick contractors trade; to acquire, preserve and disseminate valuable information and also to adjust, as far as possible, controversies and misunderstandings arising between employers and employes in the construction of buildings and other structures included in that trade. The men applying for the charter are J. Chas. Wilson, David T. Riffle, S. P. Trimble, John C. Schreimer, W. S. Miller, W. P. Shank and E. A. Wehr.

We Must Know More About Brick

Little Information Is Now Available Regarding the Strength of Brickwork—Must Take Back Seat for Competitors—Preliminary Tests Show Brick Stronger Than Concrete

By William Carver

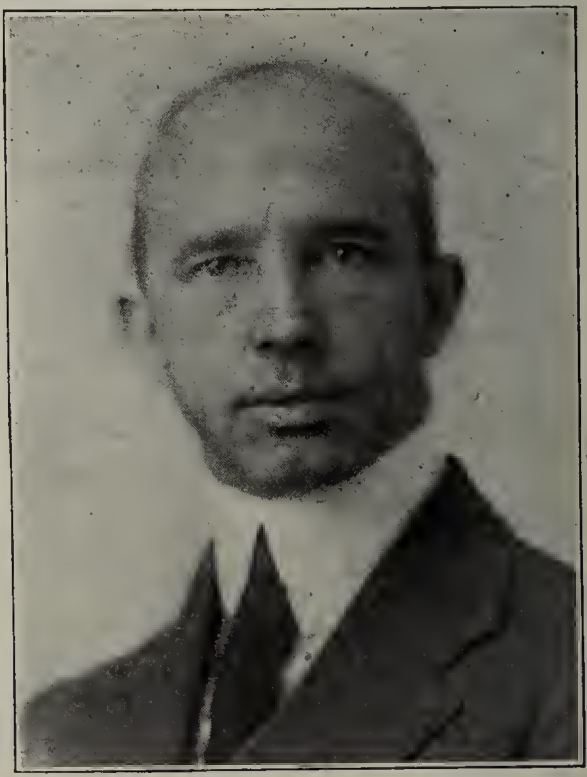
Architect, Common Brick Manufacturers' Association

ALMOST EVERY BRICK manufacturer is live enough and ambitious enough to want to increase his business. A few may not be. But there is not a single brick manufacturer in the United States, whether he is a member of the Common Brick Manufacturers' Association or not, who does not want to keep up the volume of the business he now has.

But how many realize how intense are the efforts being made to supplant brick by other materials and that in pure self defense they must do something to counteract those efforts? In the most remote country districts this competition is felt. Even in England, where in the main, things are done in a conservative way, where brick is used almost universally, where on every hand there are beautiful examples of brickwork centuries old, and where in some ways they can give us points on designing and practical construction—even there progressive brick manufacturers are banding together to counteract the competition of other materials, which are seriously cutting into their business.

Competition is Varied

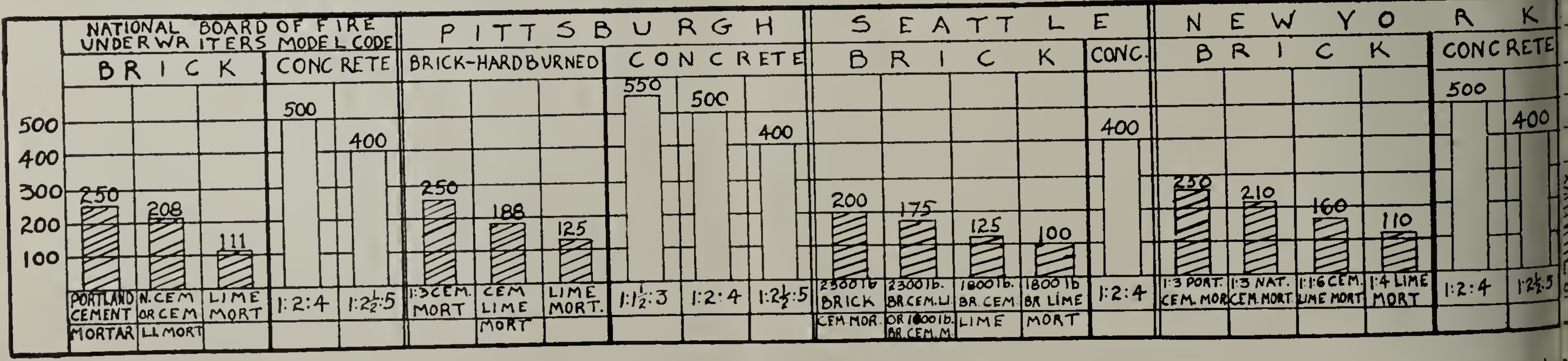
Competition comes in many forms. We have not only the familiar old competition of price but competition in many other and often unexpected ways and places. We have an unequalled example of it in the building codes of almost every city in the country and in the text books used by every engineer and architect. Turn to the building code in your town and find out what load you can place per square inch on brickwork. Then turn to the section on concrete and see what loads you can place on that material. Ask any structural engineer the same question. He will invariably quote you a low figure for brick and a high figure for concrete. That brickwork should be given a low strength rating is a misfortune to the brick industry and, it is safe to say, prevents the sale of many million brick per year. Suppose an engineer is designing a pier or a wall to carry a specified heavy load. He finds, according to all the data he has, that a brick pier or wall must be larger or thicker, use more material and take up more space than when it is built of the competing material. That engineer has several reasons why he shouldn't use brick. Of course, he still has reasons why he should use brick, or things would be worse with the brick industry than they are today. But it has been made harder for him to use brick and taking designers in the mass, many will choose the other material. The building codes, also, would prevent him using a higher strength rating, even if he wanted to do so. In this paper I am comparing brick and concrete because the latter is the most conspicuous example of this kind of competition.



WILLIAM CARVER

No Information on Strength of Brickwork

How has this state of affairs come about? Is mass concrete in reality a stronger material than brick or is it not?



Comparative Rating of Brick and Concrete Columns in Building Codes of Various Cities. Due to the Lack of Informatio

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Editor's Note—Paper read at the Common Brick Manufacturers' Association Convention at St. Louis, January 31, 1922.

Building codes and text books figure the strength of concrete according to information that the cement people have been able to produce as to the strength of their material. As to brick, they are based on no certain information for very little exists.

This lack of information on the structural strength of brick is a most serious thing. One of our best and most loyal members was very indignant with us a short time ago because we could not give him actual figures on the strength of a brick wall. A competing material was trying to get into his local building code and those promoting it contended that a wall of their material, eight inches thick, was as strong as a 13 inch brick wall. All we could offer in reply were general statements. The competing people had definite figures on the strength of their wall derived from tests.

Only two weeks ago we had a telegram from a member who was having similar difficulty with his building commissioners asking for our help; and again we could offer only general statements.

Cement Interests Studied Their Product

Inasmuch as we are making a comparison with concrete, let us see just what the cement people have done and are doing in developing information on their material. Cement, as you know, is practically a new material. It has become a giant industry practically within the last 20 years. It is a material that is used under the considerable handicap of having the concrete actually manufactured by unskilled labor at the point where it is placed. There is much more hazard and many more chances for poor concrete masonry than for poor brickwork, for the unit brick themselves which make the bulk of the wall, are a pre-manufactured article and can be inspected beforehand; and the brickwork is laid by a skilled mechanic. You are just as familiar with these facts as I am, if not more so, and so is every architect and engineer. How it it, then, that concrete is so favored?

Here is one answer—in one book alone, issued by the Bureau of Standards, are summarized the results of 20,000 tests on concrete, made under all kinds of conditions and with all kinds of aggregates. Go into any library and you can pick out half a dozen standard volumes dealing with the strength of concrete and full of formulas and tables on concrete design, all of this information being based upon innumerable other tests made over a period of many years.

Schools Teach Concrete Engineering

In hundreds of schools and universities you will find that courses are given in concrete engineering. And the concrete people are still at it harder than ever. Not only do they continually have tests made by the recognized authorities, such as the Bureau of Standards, but they have set up a laboratory of their own. Those of you who take the "National Builder" may have noted the description of this laboratory on page 60 and 61 of the January issue. No fewer than 40 engineers, chemists and assistants give their entire time to the work. The equipment of this laboratory includes the following testing machines:

1-300,000 lb. machine.
2-200,000 lb. machines.
1- 40,000 lb. machine.
2- 1,000 lb. machines.

The concrete people explain the object of their laboratory and investigational work as follows:

"None of this work is directed toward the solution of strictly manufacturing problems or with a view to economies in the operation of the cement mills. The aim is to render every assistance in the development of improvements in concrete, and to adapting concrete to new uses. This policy * * * is a reflection on the part of the manufacturers of the most advanced ideas of business ethics, that the obligation of the manufacturer does not end in the production and sale of a first-class product, but extends as well to rendering every service in his power to assist his client to a proper use of the product."

Innumerable Tests Made on Concrete

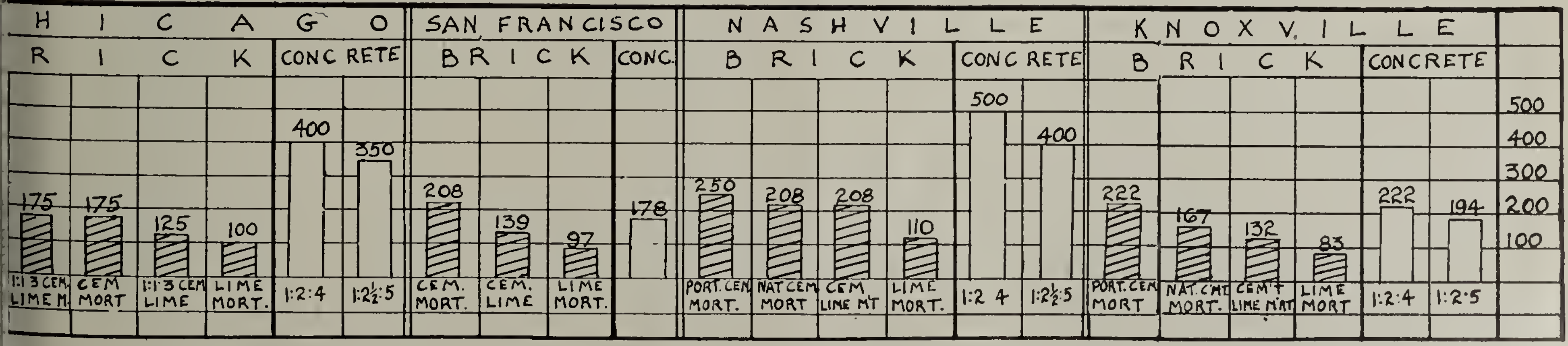
The cement people, then, have brought their material to its present position by not only advertising it and pushing it and by working out every technical detail connected with its use, but by making innumerable tests upon it so that its exact strength is established on a pounds per square inch basis, and concrete design reduced to a science.

Turning back to brickwork, of which concrete is in many instances a direct competitor, what have we to show on its strength? We have its magnificent record thru the ages, its beauty, its integrity; all of which qualities cannot be approached by any other material, but that does not answer the engineers' question, "With a given brick, how many pounds per square inch will a pier or wall safely hold?" Feeling sure that the text books and codes are too conservative, how are we going to prove them otherwise?

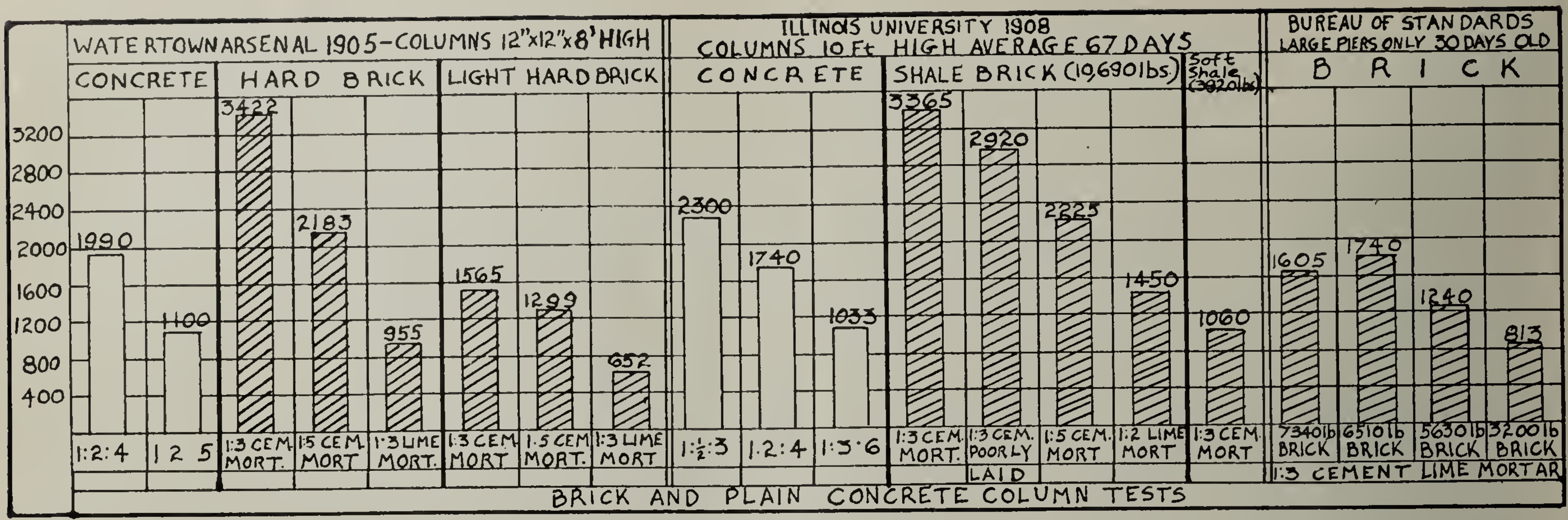
On almost the first day I came with the association, I started to hunt for just this information. I looked thru all the text books, went thru government reports dating back to 1884, and wrote to the engineering department of every university in the country having such a department, but to no avail. There existed very little evidence of the "brass tacks" variety which would enable us to start a movement to recognize a higher strength for brickwork. We must be very sure of our ground before we make any such recommendation, for we would not want to urge anything that might be unsafe, or to lay ourselves open to such a charge. We must first have the actual facts and the facts can be developed only by actual tests.

Problem Confronting Brick Men

The U. S. Bureau of Standards, the testing laboratory at Watertown Arsenal and some of the universities have done splendid preliminary work and have laid a solid foundation for the work that remains to be done. Our problem, as I see it, is this. Brick, as you know, vary



Strength of Brick Concrete Is Given a Higher Rating. Chart Prepared by the Common Brick Manufacturers' Association.



Tests of Brick and Plain Concrete Columns Made in Three Different Laboratories. Brick Seems to Show Up Better Than Concrete.

greatly in their properties according to the clay and the degree of their burning. We want to be able to predicate the strength of a structure built with every grade of brick made in every yard in the United States and laid in a standard mortar, from some easily ascertainable property or properties of the unit brick.

At the present time, the only way to find out the exact value of a wall built with any particular brick is to ship several thousand of those brick to a testing laboratory, build up three or more panels, and have them crushed. Mind you, that will only give the value of the particular brick you are having tested. It won't help you much with your other grades of brick, and it won't necessarily help any other manufacturer, the reason being that up to the present there has not been any definite and certain ratio worked out between the strength of the unit brick and the completed structure. The previous tests, if they have done nothing else, have proved that the crushing strength of the units gives no certain indication of the strength of the structure.

Some Brick Tests Being Made

The last tests of the Bureau of Standards, those made on large brick piers, show a more constant ratio between the transverse strength of the units and the structure, and in the tests we now have under way, we are working out other supplementary unit tests. You never hear of anybody nowadays building up a column of concrete to test it. All the tests made are upon small samples of the cement, the aggregates, and the steel. It is not necessary any more to test reinforced concrete. Given the strength of the constituent materials, any engineer can figure the strength and safe bearing value of the structure.

I feel sure that similar formulas can be worked out for brick, and have been encouraged to believe so by experienced engineers. That would put an end to determining the value of brickwork by taking a test example and discounting its strength heavily for other brick and for a number of unknown variable factors, until its allowed unit load is only a part of that generally allowed for types of construction which we believe may not be any stronger, if indeed they are as strong as brickwork.

Sadly in Need of Data on Brickwork

Professor Ira H. Woolson, Chief Engineer of the National Board of Fire Underwriters, wrote recently as follows:

"I am very glad to note that an extensive series of tests upon brickwork built in walls is to be undertaken at the Bureau of Standards Laboratory at Pittsburgh. I think we are sadly in need of some good authoritative investigation upon this subject, and if such an investigation should show that the stresses now generally being allowed on brick are too low, I would be glad indeed to recognize such higher stresses as investigation might seem to warrant."

Professors Talbot and Abrams of the University of Illinois, in the preface of Illinois University Bulletin No. 27, state:

"Much information is available on the strength and other properties of constituent materials like mortar, brick, stone and terra cotta, but relatively little is known of the properties of built-up structures."

Other authorities might be quoted to the same effect.

On the accompanying charts are shown the results of a few tests and of the loads allowed under various building codes.

A Lesson From the C. B. M. A. Convention

If the convention of the Common Brick Manufacturers' Association at St. Louis established any law it is this:

There is a common brick industry in America and the fortune of every manufacturer of common brick in America is contingent upon the success of that industry as such. Every plant is a cog wheel in a great machine. Those wheels which perform their individual function, meshing with the other wheels and running smoothly, will endure and help produce the result that compensates every interest in the big machine. Those cog wheels which attempt to run backward, or to stand still and not run at all, not only will retard the operation of the machine, but will strip their own cogs. The failure of a few units to coordinate will not stop the big machine but these units will find themselves finally idling, exerting no power, adding nothing to the general result, and accomplishing nothing for themselves and the interests dependent upon them.

When the enterprising manufacturers of common brick literally "from Maine to California" can be attracted to a central point by a common bond of interest, and there give expression as a unit to a single purpose, as was done at St. Louis, there cannot be outside the represented group a sufficient reactionary force to defeat that purpose. Today there is a common brick industry in America. It is growing more compact, day by day. It has a definite plan. It believes in expansion. It is progressive. It invites the alert, the enterprising, the forward looking manufacturer.

The Common Brick Manufacturers' Association of America represents the spirit of the industry. It is the only medium and agency of expression of the industry. So the association invites the alert, the enterprising, the forward looking manufacturers to bring their gears into play in the big machine; to receive the co-operative force and results and add their own power to the general result.

This association is now taking steps to continue the investigational work so well begun by others.

To Test 45 Brick Panels

We now have under construction at the Bureau of Standards Laboratory at Pittsburgh, 45 test panels of brickwork. These walls are eight inches and 12 inches thick, and are built a little higher than the usual story height and six feet long. Both solid and ideal walls are represented and the loads will be applied concentrically, eccentrically and transversely. In a test of masonry it is necessary to build at least three similar panels and make at least three tests in order to arrive at a safe average and to discount any accidental variations. The walls are all built of the same brick and while some of the mortars are being varied, in the main investigation the walls are all laid in cement-lime mortar.

The Bureau of Standards has generously donated the use of its ten million pound machine and its staff of physicists for this work; and a committee of architects from the Pittsburgh chapter of the American Institute of Architects are kindly cooperating with us. The testing machine referred to, by the way, is the largest testing machine in the world and the only one in existence large enough to crush a wall panel of the size we are testing. Probably for this reason, no tests of brick walls have ever been made before.

Objects of the Tests

We have four clearly defined objects in making these tests.

1. To find the actual strength of various types of walls, laid with an average quality brick.
2. To establish a definite ratio between the strength of solid and Ideal walls of various thicknesses.
3. To establish a ratio of strength for walls laid in different kinds of mortar.
4. Lastly, to determine, if it is at all possible, some ratio between some easily ascertainable property of the brick units and the wall laid in some standard mortar.

We want to make it possible for each one of you, by the use of some simple apparatus, to determine some property of your brick which would enable you to say with confidence that a wall or pier built of it could safely carry so much. Then we can get after the codes.

This result may or may not be accomplished in this series of tests, but I feel we shall be well started on the high road toward it. It will undoubtedly be necessary to make other series of tests to check the developed formula with other brick. I feel sure, however, that the present series of tests, made under modern conditions, with all the supplementary tests which experience and science can suggest, will prove to be the most valuable that have yet been made.

New Uses for Brick May Come Up

There are many other things in connection with brickwork which demand the attention of the experimental engineer. When we formed this association you will recall we pointed out that there might be many new uses for brickwork, for which brick might be sold in considerable quantities. You all know how concrete has been exploited for an amazing number of uses. Even ships have been built of it. Brick may not have the possibilities that cement has for diversity of use, but it can be developed in ways you may never have believed possible. The Ideal wall is the first instance of a new way to use brick and its development by this association has accomplished wonderful results for the industry already. And we in the association firmly believe that the surface has hardly been scratched.

As you know, there is a tremendous amount of masonry used for fireproofing columns. Fire resistiveness is of course the first consideration, but a second consideration is weight. Any saving in weight, multiplied all the way up the columns of a high building, would interest the structural engineer at once. The series of tests recently conducted by the National Board of Fire Underwriters showed that there are two first-class fireproofing materials—brick and concrete. Brickwork weighs about 120 pounds per cubic foot: concrete about 144 pounds per cubic foot. We may even be able to devise a special light-weight brick for this purpose.

Brick in Partition Work

We are not selling many brick for partition work, and that is a field which might be developed. A four inch brick partition can be safely used as a bearing partition for two or three stories. We know that, but building commissioners want more than our word for it. Thousands of square feet of partitions of brick on edge and of brick laid flat are used in Europe. I believe we should have tests made on the strength of thin brick partitions and develop information on them.

Another type of construction which might be developed is reinforced brickwork. I believe there is a large field for this construction, about which practically nothing is known at present regarding strength and other properties. It would pay the industry well to investigate its possibilities.

Here is another kind of brick which is made and sold in enormous quantities in England and used by housewives for polishing brasswork and any other kind of metal. It is sold in solid brick form and in powdered form, and is manufactured from slime found at the bottom of a tidal river at Bridgwater, England. Possibly it could be made here, in some districts, and could be made to have a tremendous sale.

One of the most crying needs of this industry is research and experimental work, not only in brick manufacture but in its use, and we hope you will make it possible to greatly extend the work now being done.

* * *

PUBLISH BOOKLETS ON FARM BUILDINGS

Various interesting booklets have recently been published by the United States Department of Agriculture. Among these are Farmers' Bulletin No. 438, giving a good description of hog houses; Farmers' Bulletin No. 185 on home-made silos; Farmers' Bulletin No. 1,214 on Farm Dairy Houses; Farmers' Bulletin No. 970 on Sweet Potato Storage. Each one of these bulletins give sketches and plans showing the correct way to build the various types of farm buildings. Copies of this literature may be secured by writing to the Division of Publications, United States Department of Agriculture, Washington, D. C.

* * *

EMPLOY 1,000,000 MEN ON ROADS

Road building has advanced to a point where it now is one of the nation's largest industries, having surpassed steel and iron as well as the automotive industries, according to statistics compiled by the Bureau of Public Roads of the United States Department of Agriculture. Approximately 1,000,000 men were employed in 1921 during the road building season in building and repairing the highways of the country. This is 400,000 more men than were employed in December, 1920, in the steel and iron industry, and approximately 250,000 more than were engaged in making, selling and repairing automobiles, it has been estimated.

* * *

BUILDING INCREASES IN SOUTHERN STATES

January construction in the United States was approximately 50 per cent. greater than during the same month in 1921. The southern states helped to bring the country's average up above last year's. In the 16 southern states, construction activity was more than 85 per cent. greater in valuation in January, 1922, than in the corresponding month last year. January also showed a gain of somewhat more than 20 per cent. in permit valuation over the preceding month. The December totals were $18,754,385 and in January raised to $22,977,170.

The feature of the January construction activity was the fact that it was not confined to habitational building, but was more diversified in classification. The following cities showed a permit valuation of over a million dollars for January: Washington, $2,245,897; Atlanta, $1,045,405; Baltimore, $3,246,120; St. Louis, $1,119,530; Oklahoma City, $1,095,786; Houston, $1,072,176; Dallas, $2,291,791.

* * *

FARMERS PLANNING MUCH BUILDING

According to a survey made by the Farm Journal among 1,100,000 farmers, these farmers will build 38,500 houses; 40,700 barns; 17,600 granaries; 72,600 chicken houses; 35,200 hog houses; 33,000 tool houses; 40,700 garages, and 28,600 silos. This is a wonderful potential market for hollow tile, and the wide-awake manufacturer should see that he gets a fair percentage of this business. Arguments for building these farm buildings of hollow tile are other figures which show that these same farmers will paint 239,800 houses; 140,800 barns, and 105,600 other buildings. They will repair or remodel 15,000 houses; 8,250 barns, and 3,800 other buildings. Needless to say if these had been constructed of hollow tile, an enormous expense bill for painting and repairing would have been saved and the money diverted into other channels.

* * *

COAL PRODUCTION INCREASING

Bituminous coal production is increasing steadily. In the week ended January 28 it was 9,626,000 net tons, an increase of 9.5 per cent. over the preceding week. This is also considerably above the average of 7,800,000 tons produced in the same time in 1921. The principal reason for the increase is probably the approaching strike, altho another cause may be found in increasing industrial activity.

* * *

Miniature Houses Will Tell the Story More Convincingly

IT NEED NOT BE ARGUED that the display of attractive miniature houses in a store window will attract a great deal of attention. A real faithful sample house will do wonders,—it will keep persons lingering longer at a window than it will take a salesman to tell the story of brick. It will fascinate them more than the most illuminating description of a home by an enthusiastic expounder of your product. It will do this because it gives food to the mind thru the eye, which is the most impressive and effective way of conception. But the display must be a good one.

Only a few clay products manufacturers maintain store window displays. More of them should. The local dry goods store, real estate office, bank and others would be glad to donate space for a window display of miniature houses. It is wonderful how attractive and charming these displays can be made.

The accompanying cut illustrates what can be done in the making of an exhibit. It looks very much like a picture of a real street of homes, doesn't it? But these are miniature houses made of plaster of paris. They are about one foot high by probably 18 to 24 inches long, which gives an idea of their size.

The houses are of different colors, and the plaster of paris was lined so as to imitate brick in two of the homes. The third one looks like stucco.

These three homes are of different colors, the one on the left is colored so as to look like a mixture of dark colored, rough texture brick such as browns, dark reds, purples, and so forth.

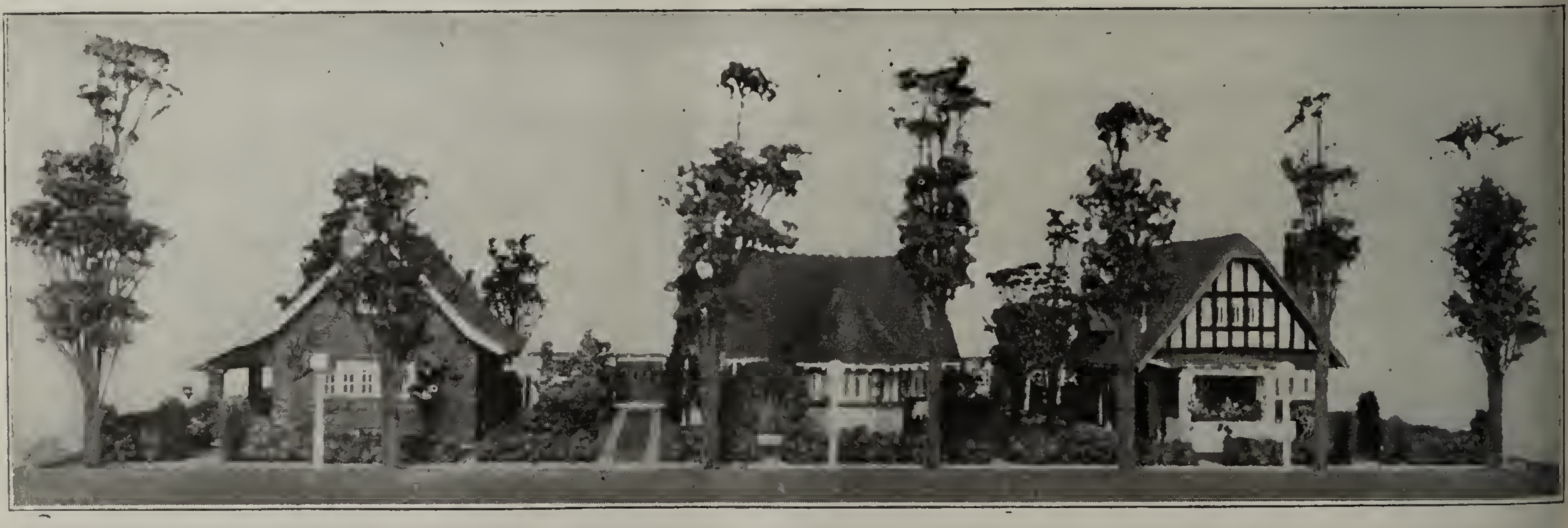
The roofs are also colored to imitate red and green roofing tile and gray slate.

The houses are hollow and window frames and doors are wood. There is no glass in the windows. The houses each have a faithful miniature garage in the rear, with regular garage doors built on.

Proper Environment Necessarv

To make the houses more effective, proper surroundings must be given. They must be set on grass plots and this can be imitated by green felt. The hedges are ordinary burdock burs sprayed with a green stain, and their appearance is quite genuine. The trees are simple weeds tied together and sprayed green. To represent vines growing on the side of the house, an evergreen tree of the flat, small leaf variety is attached to the side and front of the house. Garden plots in the yard are also arranged by suitable articles.

To make a display like this would undoubtedly cost a little money, but according to the interest this particular display has aroused, the money is paying big dividends.



Three Miniature Houses Which Are Replicas of the Brick Originals. On Display in the Office of a Chicago Real Estate Broker.

The Building Situation

CONTRACTS AWARDED for building construction in the New England district approximate $10,000,000 for the month of February, a considerable increase over the same period of a year ago. The first week of the month proved the banner one, with contract work reaching over $5,000,000.

Common brick in the Boston market is selling from $16 to $18 a thousand, delivered, the first noted being for common sand-struck varieties, and the latter for Hudson River material. Connecticut brick is priced at $21 on the job, and water-struck varieties, kiln run, at $30. Selected material of the latter character is quoted at $32. Smooth and rough texture face brick is selling for $50 a thousand, delivered.

Fire brick shows no change, with No. 1 priced at $60 and higher grade material at $70. Standard sewer pipe is 50 per cent. off list, and double strength stock, 35 per cent.

Boston contractors are paying $96 a thousand in carload lots for hollow building tile, 4x12x12 inch, and $182 for 8x12 inch stock; 12x12 inch material is selling in this market for $248. In the retail field, 4x12 inch blocks are priced at $140, delivered, and 8x12 inch at $260.

In the Providence Market

At Providence, R. I., common brick is selling at the supply yards at $20 to $24 a thousand, delivered. Face brick is $55 and $60. Fire brick is priced at $70 to $90, according to selection.

Clay tile partition is quoted at $160 a thousand for 4x12x12 inch stock, delivered, and $270 for 8x12 inch material. Drain tile is selling for 16 cents a foot for four inch stock.

Single strength sewer pipe is selling at 50 per cent. off list in the Providence market, and double strength at around 35 off list.

Active Construction at New York

Heavy residential construction continues at New York and vicinity, with inquiries for materials for spring operations indicating still larger totals in the immediate future. It is estimated that architects and engineers in this district have plans in preparation for new work to a value of over $16,000,000, including more than 400 individual operations.

February building totals are close to the January record, which shows plans filed for work to an amount of $33,500,000 in all five boroughs, or about four times the volume of the corresponding month of a year ago. The activity in the purchase of lots for new homes continues without signs of let up.

The favorable attitude of the state legislature on the recommendations of the Lockwood Housing Committee that insurance companies be permitted to invest up to ten per cent. of their total assets in the erection of new dwellings, is resulting in active plans for work of this character. The Metropolitan Life Insurance Co. is considering an appropriation of $1,000,000 for such enterprise, and will proceed with the project as soon as the measure becomes a law.

Brick Prices Hold

There is far more activity in the retail brick market in Greater New York than in the wholesale district. Dealers are absorbing their stocks for current operations and are not doing much in the way of replenishing at the moment, deferring until spring supplies are available. The material is being delivered on the job for $20.75 a thousand.

The wholesale market shows no change from the $17 level in cargo lots, alongside dock. Stocks of Hudson River common are very low, owing to the ice-bound condition of the river, and such as are available are rather closely held. For the first time in a number of months, quotations are being made on Raritan material, with wholesale level established at $20. Quite a little material is coming into New York by rail from New Jersey, and a fairly active market prevails. Brick from the Staten Island yards is also gaining in prominence, and some few cargoes of the material are being sold, with price range from $17 to $18, wholesale. Second-hand material is selling at $45 for a load of 3,000.

Face brick is becoming a feature in the burned clay material market at New York. The orders placed for spring delivery indicate that Pennsylvania and New England yards are being sold well ahead, and as a consequence there is a marked stiffening in prices. There is little surplus stock available, as many of the smaller plants have been closed down for the winter. Reds are being quoted at $45; buffs at $50; and grays at $53 and $55.

Interior partition tile, split furring, is selling at $120 a thousand for 2x12x12 inch and 3x12x12 inch sizes; 4x12x12 inch material holds at $170; and 6x12x12 inch at $190.

New Jersey Operations Continue

Heavy activity continues in the building industry in New Jersey and primarily in the line of residential construction. All parts of the state show an increase in the volume of winter operations as compared with a year ago. Current construction at Newark is averaging close to $400,000 a week. Trenton is showing from $75,000 to $100,000 in normal weeks, and other cities in southern and northern Jersey are showing equally strong aggregates.

Considerable New Jersey brick is now being sold at Newark and other cities in this district, with price of $20 and $21 for first grade material. Salmon brick and "off" material is selling for around $16. Raritan stocks are held at $21 and $22. Paterson is using Hackensack production, with quotations at $19 and $20, delivered. Jersey City has a fairly good supply both of Hackensack and Hudson River material, with price ranging from $17 to $21.

Trenton manufacturers are selling delivered stock at $18, with kiln prices around $16 a thousand. Local plants are commencing to show greater activity in line for the coming spring season, and Bardentown and other yards are making ready for increased production.

In discussing hollow tile, Tomkins Brothers, Newark, leading dealers in burned clay and other building materials, express the opinion that present base prices are not likely to hold for any length of time and such, in reality, are on a pre-war basis. Undoubtedly higher levels will prevail in the near future.

Notable Construction at Philadelphia

New weekly records for building operations are being established at Philadelphia, and there is still a heavy movement in brick house construction. This latter is easily the feature of current work, and many millions are being invested in apartments and dwellings of all kinds.

Brick producers at Philadelphia are preparing for a heavy spring run and a very optimistic viewpoint is taken of forthcoming prospects for trade. One prominent manufacturer estimates that from 3,000 to 4,000 buildings and dwellings will be erected during the season requiring brick.

Common red brick is now selling for around $14 a thousand, wholesale, with dealers asking about $17, delivered on the job; a year ago prices were about 35 per cent. above these figures.

With prevailing costs of labor and coal, the present quotations are decidedly "rock bottom," and some producers go so far as to say that they will shut down if a further decline comes.

Fire brick shows increased demand, with price holding at $70 to $80 for first grade material. Sales, according to a prominent local manufacturer, are running far in excess of those of a year ago and in considerably larger volume orders.

Hollow tile is selling for $95 a thousand, 4x12x12 inch size, in the local contracting branch of the industry, while 8x12 inch stock is priced at $175, and 12x12 inch, at $255.

Baltimore Maintains Activity

Baltimore, Md., continues to add to its building total, and February advance figures closely parallel the $3,000,000 mark reached in January. With residential construction absorbing the major part of the total, factory construction is opening up in a pronounced way for the spring, and more than a million dollars of new work of this nature is in sight.

Common brick is selling in cargo lots in the Baltimore market at $20 a thousand, with dealers asking around $21, for delivered material. Water struck brick, selected for exterior work, is selling for $30 and $32, according to selection. Salmon material is priced at $14. Fire brick holds at $75, and high grade face brick at $45 to $55, according to stock and color.

Baltimore contractors are paying $150 a thousand for hollow tile, 4x12 inch; $250 for 8x12 inch in carload lots; and $400 for 12x12 inch stock.

Pittsburgh Construction

During the last two weeks building permits in Pittsburgh, Pa., totaling over a million dollars, have been applied for and actual construction has been started in many instances. Altho there are many large building projects contemplated or have been proposed, the actual construction was limited for the most part to smaller business buildings and houses. A decided attempt is being made to relieve the present housing shortage existing in the city and this fact coupled with a general move to raise rents thruout the district has resulted in quite an increase in the small construction line. Agreements with all the trade unions included in construction work have been made and both contractors and workmen express themselves as well pleased with the new agreements. They are to continue in effect until March 1, 1923, and in most instances include a substantial reduction in wages.

Bright Prospects for Columbus

Indications for a better building demand for brick and, in fact, all clay products in Columbus and Ohio territory are much brighter. Many jobs are being started and it is believed that on the whole 1922 will be a good building year in many ways. At least indications point to a much better year than in 1921. The first half of the year will undoubtedly be pretty active as many home building projects have been started. There is a goodly number of large building projects in Ohio cities. In Columbus alone, there are three large high school buildings to cost $900,000 each and possibly more to be awarded. One high school job has been let and started. In addition there will be considerable work on the campus of the Ohio State University and also at many of the public institutions of the state. A large 12-story hotel on West State Street, Columbus, is projected and will be started soon. School buildings in many parts of Ohio will soon be awarded and plans for others are being made by architects.

An optimistic feeling that 1922 will be the turning year for the better—possibly a boom year—prevails among the brick and clay products manufacturers and dealers in Cincinnati, Ohio.

Cincinnati Construction May Reach Big Totals

The feeling is based on the large number of big contracts already let, the actual building operations now under way, the large number of proposals that are being advertised and locally, the known shortage of 5,000 homes which is proportionately the same thruout the country.

At the present time, more than $3,000,000 is invested in building operations while in 1920 at this time, only $341,000 was invested in construction work. An agreement was reached recently with the carpenters and no difficulty is looked for in coming to an agreement with the bricklayers when the present contract between the union and the employers expires in May. In some quarters, a fear is expressed that if the expected boom materializes as indicated that the heavy demand for labor and material may force the cost of construction upward. Several large projects of the million-dollar class are expected to be started soon.

Cleveland Faces Tie Up

Trades of Cleveland demand a return to the 1920 rate and base the claim on the fact that there is an abundance of building to be done and contractors will have to go ahead; the Building Trades Employers' Association flatly refuses to consider such a proposition and the announced rate, to take effect immediately, calls for reductions ranging from 13.5 per cent. to 36 per cent. of 1921 scales. The result is the two factions are deadlocked.

Meanwhile public and civic organizations, including the Chamber of Commerce, are straining every point to try and restore peace. The tie up last year cost millions and every effort is being made to avert a repetition of such a contingency.

Announcement of additional building projects are being made daily, the past few weeks seeing authorization of close to $500,000 for residence developments. Altho the building season is regarded as open, owners are not going ahead and are not expected to until such a time as the labor situation has cleared and they can be insured against tie ups.

Louisville Has Much Work in Sight

Building prospects in Louisville, Ky., are generally argued as looking promising, but if only a small percentage of the big work in sight comes out this spring Louisville will be unusually active in the building line, and labor should be fully employed at good wages.

There isn't much store or commercial work in sight, but there is considerable work, including municipal, industrial, school, hospital and similar buildings, in sight. Several large projects of $1,000,000 and over are in sight.

At Birmingham

The brick market is on the upward climb in the Birmingham, Ala., district. Many orders are being sold and there are a goodly number of inquiries coming in. Prices are holding up well.

Local contractors say that they expect the year 1922 to be one of the best business years for some time. They say that a number of buildings are already under contract or the plans are being drawn. A number of brick residences and business blocks have been contracted for. At the present time many new homes are being built, which will cost all the way from $2,000 each up to several thousand.

The indications that Muscle Shoals will soon be developed is putting new life in business conditions of all kinds here. In the event the government leases or develops this project it will mean one of the biggest building booms Birmingham has ever witnessed, contractors say.

(*Continued on page* 400.)

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Ianufacture of Higher Grade Ceramic Products such s Whiteware, Including Electrical Porcelain, Floor and Vall Tile, Sanitary Ware, etc., as Well as Stoneware, erra Cotta, Special Refractories and Other Articles Vhere High Grade Clays Are Employed in Their abrication.

)EPLORABLE CONDITIONS IN THE FELDSPAR INDUSTRY.

OWARD THE END of 1920, the average grades of ground eldspar offered to the pottery industry were so poor and so enerally unsatisfactory that many of the largest consumers deded to take active steps for their own protection. A few of e potters made arrangements to grind their own feldspar, hile others asked the Bureau of Mines to make a detailed study the problem and to suggest methods of improvement. Acrdingly such a study was undertaken by Raymond B. Ladoo, ineral Technologist of the Bureau of Mines, the partial results which are outlined in this preliminary report.

Many of the largest grinders of feldspar own only one or o small deposits, and depend for their major supply on rchases of crude rock from many scattered small producers. all feldspar deposits were uniform in quality, this practice ight not be objectionable, but no two deposits are exactly ike and often there are great variations even in the same posit. With a small production mining costs are apt to high, and, at the comparatively low prices often paid for ude feldspar, the margin of profit is too small to permit ry careful selection of material. Small mines at a distance om railroads are often worked only intermittently, when e wagon roads are in good condition or when farmers can are their teams for hauling. In order to maintain a steady oduction at the grinding mill it is necessary to buy material small job lots from many different mines. The result is at constantly varying mixtures of feldspars, themselves varyg greatly in type and quality, are ground.

At no mines and at very few mills are adequate physical chemical tests made on the products. A few mills make rly frequent screen tests and an occasional fusion test. No emical analyses are regularly made at any mill, but occanally analyses are made of crude feldspar submitted for rchase. In order to check adequately the quality of ground dspar offered for sale, regular and systematic screen tests, ion tests and chemical analyses must be made. Screen l fusion tests should be made on each car load shipped. It not feasible, however, to run a chemical analysis on every load, because the analysis of feldspar is a long and newhat tedious operation. Therefore, in order to insure abute chemical control, it is necessary to start at the quarry. detailed topographic map of the deposit should first be preed, on which should be carefully plotted the boundaries blocks of material obviously differing in quality. Samples should then be taken at uniform intervals thruout the deposit, numbered, and their location marked on the map. After the samples have been analyzed, the quarry may be divided into blocks of similar composition, and a method of working outlined so that the approximate quality of all crude feldspar may be known. Frequent resamplings and analyses should be made as the quarry faces are advanced.

Large Storage Bins Necessary

At the mill large storage bins should be provided either for gravel feldspar (after the first crushing) or for the finished material, or both. These bins should be large enough to hold several carloads, and should be so arranged that samples representative of the contents of each whole bin may be collected systematically at uniform intervals for analysis. In conjunction with the chemical analyses, expert microscopic examinations are of great value.

Since reliable chemical analyses and microscopic examinations of this character can only be made by a specially trained chemist, and the expense of maintaining such a man by a single company might be prohibitive, it is suggested that it might be possible to have such work done by a competent commercial laboratory on a yearly contract basis.

Inefficient methods of mining or quarrying, and out-of-date mills are in many cases, responsible for undue wastes, high costs and poor quality of product.

Percentage of Good Spar Is Low

In the quarries visited, the proportion of good feldspar recovered to total material moved varies from 30 per cent. to about 80 per cent. and averages not more than 50 per cent. but a large part of the material wasted is good feldspar in small pieces or mixed with small amounts of objectionable impurities. The purer the feldspar the greater is its friability, and consequently the greater are the losses in fine sizes from blasting. In order to obviate this difficulty lighter blasts are used, which result in large blocks of feldspar. These blocks are sledged by hand, sorted and hand cobbed to remove impurities; but hand cobbing is slow and expensive. If very careful cobbing and sorting are attempted, the costs may be unduly high, so the only alternative under this method is less careful work which results either in wasting large amounts of good feldspar or lowering the grade of product. At many quarries there are large dumps containing 50 to 80 per cent. good feldspar either in fine sizes or in lumps mixed with impurities.

Decided savings both in feldspar and in costs could be effected by the use of large crushers, reducing the crude feldspar to about four-inch lumps, followed by a picking belt from which waste and number one grade could be picked, the number two grade being left on the belt. Some hand cobbing might also be needed; but not much unless the quarry is of poorer than average grade. Such equipment could be installed at either quarry or mill.

Quarries Poorly Laid Out

Many quarries are very poorly laid out. This is due to a lack of careful prospecting to determine the limits of the ore body before opening the quarries, and to lack of systematic

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ditor's Note—Owing to the length of the report it has been ided into two sections. The second part will be printed in the ch 21 issue of Brick and Clay Record.

planning. Several quarries were noted where large waste dumps have been allowed to accumulate on top of valuable parts of feldspar deposits. The subsequent removal of this waste is expensive and the cost may be prohibitive. Some deposits have been opened by a series of small, irregular, scattered workings in such a way that efficient operation is impossible. While it is recognized that many feldspar deposits are so irregular in outline that no standard methods of quarrying may be used, still, many quarries would profit greatly if a definite scheme of development were determined and followed. Small scattered workings cause waste of ore, and are more difficult of supervision, require more equipment, and complicate systems of haulage and waste disposal.

The lack of careful planning and the use of improper equipment cause much rehandling of ore. At one quarry the ore is loaded by hand into wheelbarrows, wheeled and dumped into a pan, hoisted by a derrick, dumped on the ground, sorted and cobbed by hand, loaded by hand on a truck, and trammed over a track to an ore dump, from which it is loaded by hand into a motor truck for transportation to the railroad. If cobbing were replaced by a crusher and picking belt, and a few changes made in the present equipment, the ore could be transported from the pit to the motor trucks without once moving it by hand. The saving in cost would repay the necessary initial investment in a short time.

Milling Methods Inefficient

In the milling of feldspar, inefficient methods and machines are even more prevalent than in quarrying operations. As at the quarries, many needless rehandlings of ore by labor are common. At one plant the ore is unloaded by hand from the cars into wagons, hauled to the mill, unloaded by hand to the mill floor, sledged into small pieces, shovelled into wheelbarrows, wheeled and dumped into "chaser-mills." In this type of mill so commonly used in feldspar grinding, the rock is crushed by heavy stone wheels revolving about a common axis on a bed. After being coarse ground, it is trammed by hand and dumped into pebble mills of the intermittent type. When the grinding is finished the feldspar is dumped on the floor, and shovelled by hand into storage bins. From the bins it is loaded by hand into motor trucks, hauled to the railroad and transferred by shovel and wheelbarrow into box cars. This method involves at least six changes by hand, while efficient methods should involve but one or two rehandlings at most.

Most of the feldspar grinding mills still use the old, inefficient types of grinding machinery which have been common for many years, altho it is encouraging to note that a few mills have begun to install more modern equipment. For primary grinding the six-foot "chaser-mill" and for final grinding the intermittent pebble mill, or dump cylinder, are still so common as to be almost standard equipment. The chaser-mill should have little or no place in modern milling methods. These machines have been superseded in improved mills by more recently developed equipment which produces a better product at a lower cost.

* * *

TILE AND MANTEL MEETING SUCCESSFUL

The Tile Manufacturers' Association and the Tile and Mantel Contractors' Association of America held a joint annual convention at the Jefferson Hotel, Richmond, Va., February 14 to 17. Hundreds of delegates from all over the country attended.

The general session was called to order on February 14 by H. N. Francis, chairman of the Richmond reception committee, and W. T. Dabney, business manager of the Chamber of Commerce, introduced the speakers. An address of welcome was delivered by Mayor George Ainslie, and responded to by E. P. Butler, president of the Tile and Mantel Contractors' Association.

An interesting talk by Miss Rachael Gregg, of the State Board of Education, followed Mr. Butler's remarks, calling attention to Richmond's superiority as a convention center and urging the guests to take advantage of its historic offerings. Other speakers were: D. Knickerbacker Boyd, A. L. Gale, who spoke on "How to Sell More Tile in 1922;" Herman C. Muellar, on "Commercial Development of the Tile Mantel," and Edward Dodd, on "Can the Predominance of Tile Be Maintained Under Prevailing Conditions?"

The opening session was marked by the large number of women present, which far outranked any previous convention. At the conclusion of the first day's meeting, officers of the associations stated that the convention would break all records for attendance and accomplishments.

A feature of the Tile Manufacturers' convention was the special exhibition of tile work in the palm room of the hotel, held on the evening of February 15. The exhibit was presided over by William C. Noland, and was open to the public. Several prominent tile men addressed the gathering.

At the final meeting of the Tile and Mantel Association, E. P. Butler, of Milwaukee, Wis., was re-elected president for the third term, and T. J. Foy, of Cincinnati, Ohio, was chosen for his fourteenth term as secretary-treasurer. The 1923 convention of this association will be held at St. Louis, Mo.

* * *

UNITED STATES GOOD BUYER OF GERMAN WARE

Competition from Germany in the pottery industry is now very keen, the new German price policy enabling the pottery people of that country to undercut foreign values by roughly five to ten per cent. Now that a general trade revival is at hand the activity among the pottery firms of the Fatherland is increasing. A finger is kept on the foreign market pulse in every corner of the world. Information as to the tendency of these foreign markets reaches the pottery firms in Germany thru such channels as trade publications, commercial travelers banks, resident representatives and the like.

The control bureaus work in cooperation with these foreign informants collecting and tabulating information on the pottery industry of the world and the condition of the world markets in brick, clay and allied products. These bureaus work exclusively for the pottery industry and are composed of pottery experts Conditions in the brick, tile, drain, coarse and fine pottery and ceramic industry of Germany are good. There is a shortage of raw materials and coal. Apart from this "fly in the ointment" one might almost say that the industry there is prospering mightily.

The exports to Europe and America are satisfactory, according to the latest tables compiled by the bureaus and published for the benefit of the pottery industry. Holland is the larges importer of brick, clay and kindred products from the Fatherland. For the period May-November, last year, Germany exported more than 331,685 tons of pottery products which wer valued at 1,075,241,000 marks. In 1920 the year's exports in pottery totaled 382,378 tons valued at 1,114,880,000 marks.

Taxation has been lifted from the pottery industry and ther is now no direct tax on pottery exported from the country Instead of a government tax there is a levy on pottery firm which varies according to the grade of goods turned out an ranges from one to ten per cent. on the invoiced value of th product. This levy is not unpopular, however, since it is use exclusively to better the condition of the pottery employe an thereby encourage him to work more loyally for the manufacturer. Just now Germany is noting an active home deman for porcelain. The porcelain industry has recently adjuste prices to 100 per cent. above pre-war rates.

Recently there has been some disturbance in some branche of the industry owing to complaints from foreign buyers that certain grades of products have not reached the usual standard of quality. This has prompted the Foreign Trade Control Bureau to discontinue the granting of export permits for low-quality ware. Prospects in fine ceramics are such that much additional labor is being absorbed in this branch.

As for the world market for these German products the U. S. A. takes about 20 per cent. of Germany's production of such goods as porcelain insulators, white porcelain ware, table ware and chemical apparatus, the value of last year's consignments being in the neighborhood of 567,190,000 marks. Holland takes 72 per cent. of Germany's facing and lining brick; 64 per cent. of unglazed, hollow and perforated brick; 51 per cent. of glazed brick and heavy paving slabs; 40 per cent. roof tiles and pans and 26 per cent. of fine pottery products and luxury ware. South America takes 50 per cent. of face brick, slabs and tile.

* * *

USE OF PORCELAIN POTS URGED

Following a series of comprehensive tests covering the effect of using glazed porcelain coffee pots as compared with metal pots, Professor S. C. Prescott, head of the Department of Biology, Massachusetts Institute of Technology, Boston, urges the use of the porcelain vessel. A glazed porcelain pot, he points out, is as good as glass, and makes coffee safe and sane. Metal pots, on the other hand, are stated to be objectionable, as the action of the natural acids of coffee on metal produces metallic salts.

* * *

DISCUSS ARCHITECTURAL POLYCHROME

A special exhibition of tiles and an evening devoted to Architectural Polychrome was recently promoted by the Committee of Architects of Richmond, Pa., cooperating with the Associated Tile Manufacturers. Several well known speakers were on the program, among them D. Knickerbacker Boyd, former vice-president and secretary of the American Institute of Architects, who spoke on "The Historic Origin of Tile Work;" Mrs. Caroline B. King, writer on household economics for the Ladies' Home Journal, Good Housekeeping and Pictorial Review; Albert Kelsey, formerly president of the Architectural League of America.

* * *

TESTING WHITE CLAYS AT SEATTLE

The report on the technology of the clays of the State of Washington, prepared by engineers of the Northwest Experiment Station of the Bureau of Mines, Seattle, Wash., is pracically completed. Fusion tests of the second series of white-vare bodies made of all Pacific Northwest materials range rom cone 29 to cone 31 plus. Analysis of the electrically-used English china clay gave approximately 63 per cent. alumina, 34 per cent. silica and two per cent. lime, showing that portion of the silica had been removed leaving nearly pure illimanite. Work on the new ceramic laboratory at this staion is being continued.

* * *

INDIANS SEEK GOVERNMENT HELP

In Arizona and New Mexico the American Indians are still making clay ware as they did years ago, but recently the Indians ppealed to the Bureau of Standards of the Department of Commerce to help them produce better ware. The pottery ashioned by them is very fragile, due to burning in a smolering heap of refuse, and cannot stand the rough handling it must undergo by tourists and sightseers, who purchase various ieces of ware as souvenirs.

Ceramic engineers of the bureau, after making tests of the lay used, have recommended that the ware be burned at a slightly higher temperature, and have furnished plans for simple kilns for burning the pottery. The Indians were also given pointers on the use of various stains for decorating purposes, and how to prevent the higher burning temperature from destroying the decorations.

* * *

PLASTICITY IN WHITE CLAYS

Laboratory work on white clays at the Ceramic Experiment Station of the United States Bureau of Mines at Columbus, Ohio seems to show that plasticity may be largely due to partly decomposed kaolinite particles forming silicic acid. Silicic acid was recovered from Wilkinite and clays by caustic soda treatment. Work has been started on the effect of sodium hydroxide ($NaOH$) on the viscosity of Wilkinite. Work is being continued on the effect of heat treatment on the colloidal properties. The addition of sodium hydroxide in large amounts was found to increase the flow of water thru clays.

* * *

ANCIENT POTTERY IN INDIAN MOUNDS

The archaeological expedition into Archuleta County, Colorado, undertaken under the direction of Dr. E. B. Renaud, of the University of Denver, and J. A. Jeancon, archaeological curator of the Colorado State museum, last summer, uncovered ruins of the prehistoric Indian mounds and dwellings which are probably the richest in number and variety in the entire Southwest.

The pottery discovered in the ruins, while showing progress from crude to elaborate models, indicate that the prehistoric potters of Chimney Rock (the scene of the greater portion of the excavations) did not reach a degree of skill in shaping and decorating their vessels equal to that of the Mesa Verde cliff dwellers except in a few instances. Much of this pottery was brought back to Denver, and is now being cleaned and studied by some of the students under the direction of Mr. Jeancon.

* * *

W. H. TURNER SUCCUMBS TO ILLNESS

Wilbur Henry Turner, age 31, treasurer of the Kokomo Sanitary Pottery Co., Kokomo, Ind., died recently at his home there, from a complication of diseases from which he had been suffering for several years. He is survived by a widow, formerly Mildred Walsworth; three sons, William, age 8, John, age 5 and a baby, Wilbur, Jr. His father is W. H. Turner and Mrs. Hugh R. Perry, of Kokomo, is a sister.

* * *

MADDOCK REORGANIZES SALES FORCE

The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary ware, has made a number of changes in its sales force. Richard Lane, heretofore covering New York and New Jersey, has been assigned to New England territory, with headquarters at Boston, Mass. Charles R. Stines will be in charge of the southern district, including Georgia, Florida, North and South Carolina, Louisiana, Alabama and Tennessee, with headquarters at Atlanta, Ga. "Hock" Whelan, heretofore handling southern territory, will hereafter be in charge of New York and New Jersey sales. J. F. Kelley will remain as representative on the Pacific Coast.

* * *

FORDS PORCELAIN INCORPORATES

The Fords Porcelain Works, Perth Amboy, N. J., will in the future operate as a corporation, and a charter has been taken out under state laws with a capital of $1,000,000, under the present company name. The three plants, two at Perth Amboy, and one at Fords, will be continued for the manufacture of sanitary ware, including porcelain sinks, lavatories, wash basins and kindred products. Abel Hansen is president of the company.

* * *

TO MAKE PLANT IMPROVEMENTS

Business for the past year has been very satisfactory for the Kahler Pottery Co., of Louisville, Neb., declared P. F. Kahler, president and general manager, at the annual stockholders' meeting. Orders for spring delivery are coming in far in advance of expectations. The company is planning to make several improvements during the coming year, among them being a steam shovel, a side track into the yards, and more shed room for finished ware.

* * *

INCORPORATES FOR $50,000

The organization of the National Stone-Tile Corporation, San Francisco, with a capital stock of $50,000 consisting of 500 shares at $100 each, has been announced. $300 of this amount has been subscribed by A. M. Flood, Michael Brown, and J. Paul Miller.

* * *

WILL BUILD $250,000 ADDITION

The Pomona (N. C.) Terra Cotta Co. is perfecting plans for the erection of a new plant addition, estimated to cost about $250,000, including equipment.

* * *

RAIL EXTENSION MAKES POTTERY POSSIBLE

The proposed extension of the Temiskaming & Northern Ontario Railway from Cochrane to James Bay—180 miles north—will make possible the establishment of a new industry in Canada, namely pottery. A very large and fine deposit of ball clay lies along the new route of the railroad, and the advent of transportation will greatly facilitate the development of this part of Ontario.

* * *

FORM $10,000 CHINA COMPANY

The Rosenthal China Corporation, New York, N. Y., has been formed under state laws with a capital of $10,000, to manufacture chinaware products. The company will operate in conjunction with a new company organized by the same interests, with a capital of $10,000, to be known as the Continental Ceramics Corporation. The companies are headed by L. E. Hellman, V. I. Weldon and W. S. McKay, and is represented by S. F. Hartman, 120 Broadway, New York.

* * *

MOVES TO NEW LOCATION

Maddock & Miller and Herman C. Kupper, Murray St., New York, chinaware products, have leased for a long term the six-story building, 42x117 feet, at 39-41 West Twenty-third St., extending thru to West Twenty-fourth St., for new local headquarters. The present establishment will be removed to the new location.

* * *

LUSTER DECORATIONS ON POTTERY

Luster decorations may be applied to pottery by two methods: first, by applying in paste condition suitable metallic salts to the surface of the ware and firing at a dull red heat; second, by vaporizing such salts in the flame of the kiln in which the ware is placed. The latter method is productive of iridescent effects similar to that of favrile glass. An investigation of lusters for pottery decoration has been made by the Bureau of Mines to determine the most suitable glaze composition for taking vapor lusters. Results indicated that glazes containing B_2O_3 and PbO produced the best luster effects, the intensity of the luster increasing with larger amounts of these two components in the glaze.

* * *

PORCELAIN COMPANY CHANGES HANDS

J. W. Boch of East Liverpool, has disposed of his interest in the Boch Metch Porcelain Co., to George Howard of Newell, W. Va., Mr. Howard assuming charge January 1.

The Boch Metch concern took over the plant of the Novelty Clay Farming Co. several months ago to engage in the manufacture of electric porcelain supplies. Mr. Boch also manufactures similar supplies in a small one-kiln plant along the river front near the Homer Laughlin China Co.

Mr. Howard was the builder of the factory in which he is now interested, having disposed of the plant to Fred Owen and others who are now in East Palestine.

* * *

FIRST PORTLAND POTTERY OPENS

The Cascade China Co., Portland, Ore., has opened a factory on Vancouver Avenue along the O.-W. R. & N. tracks, and will manufacture a varied line of pottery. A display of vases, mixing bowls, jugs and creamers made by this company was on view at the Oregon Home Exhibit held recently in Portland. Many of these articles were beautifully decorated by the Keramic Club, a group of 18 local china artists. H. C. Elliott is president of the Cascade China Co., the first industry of its kind to be opened in Portland.

* * *

PORCELAIN COMPANY BEGINS PRODUCING

The first burn has been completed at the plant of the Dailey Clay Products Co. at Warrenton, Ore., consisting of yellow mixing bowls. One kiln a week will be fired hereafter. The January production will amount to 6,000 dozen bowls, which have been contracted for by a Portland wholesale house. The company will specialize in the manufacture of mixing bowls, teapots, cuspidors, jardinieres, jugs and hallboys, according to Charles V. Beede, secretary.

* * *

W. T. McNUTT SELLS CHINA INTERESTS

Announcement is made that William T. McNutt has disposed of his interests in the Albright China Co., of Carrollton and Scio, Ohio, to F. W. Poland, of East Liverpool. Mr. McNutt held substantial interests in both plants. He was the founder of the nine-kiln plant at Scio which began operations two months ago, and was president of both concerns before and after their consolidation. He was interested in the Albright China Co. when the nine-kiln plant at Carrollton was established five years ago.

* * *

BUILDS 10,000 GALLON KILN

The Panama Pottery Co. of Sacramento, Cal., has just completed the first firing in its new kiln, which has a capacity of 10,000 gallons of crocks and stoneware. This is double the former output. George Boroughs, manager, reports that the new kiln is a big success. Improvements recently made on the plant, including the kiln, totaled $8,000, and 14 to 20 men are employed.

Mr. Boroughs states that they are enjoying a big demand for clay ware of all kinds. Delivery is made by truck thruout the lower part of California, and their export business is consigned to the Hawaiian Islands and the Orient.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

INSPECTING STEAM TRAPS

In the average factory probably no piece of equipment is accorded less care and attention than the ordinary steam trap used for draining water from pipe lines, radiators, drying kilns, heating coils, and other steam apparatus. This is despite the fact that each leaky trap represents an important and serious loss of water or steam.

Most of these steam traps are based on the use of floats and a valve for shutting off the outlet when the water is all discharged. Of these, perhaps the big majority of traps which have not had recent attention are found to be leaking, slightly or seriously. The more common reasons for this are because of an accumulation of dirt or rust on the valve seats, or the wearing away or cutting of the valve seats or the valve itself.

In other cases, the float is water-logged and hence sluggish in operation. The result is that the steam blows out even after the water is all discharged. Or the trap may become air-bound, which makes its operation slow. Again the trap may become filled with mud or sediment from the water and pipe lines clogging the moving parts of the trap and causing it to leak.

One power engineer analyzed the various factors which thus affect the satisfactory operation of the traps. He also appreciated the loss which takes place when the traps leak steam and blow to waste. To overcome this he assigned one of the power-house force to make a round of the steam traps thruout the entire plant twice a week. Once on Monday morning, and again on Thursday morning, he makes a brief inspection of each trap to determine whether it is in good operating condition. In addition he blows off the trap to rid it of air and any accumulated sediment.

The man often reported that traps were sticking open and blowing steam without any trapping action at all. Whenever this trouble is chronic the trap is immediately replaced, because the saving in having the trap operate properly pays for a new one in a short period of time.

This plan of having one of the engineers make a regular round of the traps, similar to the regular round for lubricating purposes, should repay plentifully for the extra time and effort required.

In connection with this work, the man uses an ordinary record sheet, listing all the traps in the plant by number and location, with spaces for filling in the dates of inspection, and for noting any troubles or other out of the ordinary features. A survey of this sheet from time to time shows which traps are standing up and which are falling down and require to be replaced or repaired.—*W. B. S. in "Factory."*

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DUMP TRUCK SUPPLANTS FIVE TEAMS

A five ton dump truck is being used by the Los Angeles Brick Co. at their plant in Alberhill, Cal., for hauling clay from the pit, a distance of two miles. From 9 to 13 trips a day are made, averaging seven tons to the load. Chas. Hudson, superintendent, reports that this one truck does the work of four or five 4-horse teams, their former way of handling the clay, and has proved very satisfactory.

KIND OF MATERIAL		Trap Granite Gneiss Quartzite	Hard, Solid and Thickly Bedded Limestone and Dolomite	Medium Thickly Stratafied Limestone	Thinly Laminated Limestone	Sandstone	Shale Medium Hard to Soft
Recommended Diameter of Hole, Inches		6½ to 5⅝	6-5⅝	5⅝	5⅝-5	5	4½-4
Kind of Explosive—Average Conditions		60% Dyn	40% and 60% Dyn	40% Dyn.	30%-40% Dyn.	30%-40% Dyn.	30% Dyn. or Powder
Spacing in Feet for Given Depth of Cut. Feet	15	7 x 8	8 x 9	9 x 10	10 x 11	9 x 10	10 x 11
	20	9 x 11	10 x 11	10 x 12	12 x 12	10 x 12	12 x 12
	25	10 x 12	11 x 12	12 x 14	13 x 15	12 x 14	13 x 15
	30	11 x 13	12 x 14	13 x 15	14 x 16	13 x 15	15 x 17
	35	12 x 13	13 x 15	14 x 16	15 x 17	15 x 17	16 x 18
	40	12 x 14	13 x 16	15 x 18	17 x 20	16 x 19	17 x 21
	45	13 x 15	14 x 16	16 x 19	18 x 21	17 x 20	18 x 22
	50	14 x 15	15 x 17	16 x 20	18 x 23	18 x 21	19 x 23
	55	14 x 16	16 x 18	17 x 21	19 x 24	18 x 23	19 x 24
	60	15 x 17	16 x 20	18 x 22	20 x 25	19 x 24	20 x 26
	70	16 x 18	18 x 22	19 x 23	22 x 26	20 x 25	22 x 27
	80	17 x 20	19 x 24	20 x 25	23 x 28	21 x 26	23 x 28
	90	18 x 21	20 x 25	22 x 26	24 x 29	22 x 27	24 x 29
	100	19 x 22	22 x 26	24 x 28	25 x 30	23 x 28	25 x 30
	120	20 x 25	23 x 27	25 x 29	26 x 31	24 x 29	26 x 31

Suggested Spacing of Drill Holes of Different Heights in Various Kinds of Material.—Taken from "Rock Products."

Electric Motors and Generators
for all requirements of the
Brick and Clay Industry

BURKE ELECTRIC CO.
MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

Service-Sales Offices
NEW YORK CLEVELAND PHILADELPHIA
PITTSBURGH DETROIT BUFFALO

Sales Agencies
CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

Three Brick Plants are already established along the Pittsburgh, Lisbon & Western R. R. and the clay supply is inexhaustible.

The territory along this railroad is one of those unusual feats of nature, which seems to have been planned expressly for the benefit of mere man. Here, lying together, one on top of the other, are the two substances which are paramount in the manufacture of clay products.

First layer—4 to 20 ft. of red plastic clay, suitable for the manufacture of face and paving brick. Second layer—30 inch high grade bituminous coal, then another layer of high grade fire clay 6 ft. in depth, suitable for face brick, sewer pipe or tile.

This territory is an ideal location for brick plants of any size. Electric power and natural gas available. Shipping facilities are first class.

Write for full information,
analysis of clay, factory sites
and price of land.
No obligation.

Pittsburgh, Lisbon & Western R. R. Co.
LISBON, OHIO

Questions and Answers

Best Authorities in Every Clay
Working Branch Are Called Into
Consultation—Their Advice Is
Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

USING SOFT MUD MACHINE AS MIXER

1,025, Mississippi—Some time ago I saw in passing on the train a big soft mud brick machine, which was all that was left of the plant. I have wondered if a man could take it and use it as a mixer or even feeder for a stiff mud plant. We have a white or grayish clay and pure old red clay. Dragging the dirt over a bridge, dumping into the clay car, and shoveling it into the disintegrator does not mix it sufficiently. We have a spotted kiln of two, three or four colors. I think by getting a mixer or feeder we could put out the best stiff mud brick in north Mississippi.

We are afraid that you will not find it successful to use the soft mud brick machine you mention for mixing your clays. This machine mixes the clays in the soft mud condition, and mixing clays in that physical state is never very satisfactory.

The best way to mix two different types of clays is to mix them when they are finely ground, hence we would suggest that you crush your clays either separately and feed them in proper proportion from two separate bins into the pug-mill, or else feed the clays in equal and constant proportion into a dry pan or pulverizer.

We are afraid you will be wasting whatever money you pay for this second-hand soft mud machine and a lot of time in attempting to mix the clays in that apparatus. Perhaps you can pick up a second-hand dry pan or pulverizer at just as good a price, and you will be far ahead of the game.

OVERCOMING LAMINATION AND WARPING

1,026, Illinois.—In the manufacture of brick we are troubled with excessive lamination and warping. In an effort to overcome these difficulties we are adding grog. It helps but has not entirely overcome these faults and seems in our opinion to take an exceptional amount. We also have trouble keeping the space between the auger and liners at a minimum because the nature of the clay is such that it packs between the auger and liner to such an extent that it breaks the liner. We have used pieces of belt to shim the liners to their proper place, but we have found this very unsatisfactory.

We are using a six frame die with oil lubrication on the back four frames. The die is ten inches in length and the back of the die is 11 inches from the end of the auger. The standard distance between the back of the die and the end of the auger for this machine is eight inches, but we have increased this three inches in an effort to overcome lamination. The back of the die measures 9¾ inches by 5⅜ inches, and the mouth of the die 8⅞ inches by $4\frac{3}{16}$ inches. The die is $\frac{3}{32}$ inches narrower at the center than at the corners. Regardless of this difference in the width of the die the clay bar swells in the center immediately after leaving the die.

We are using a surface clay. Its plasticity increases with soaking. It becomes short with too much pugging. The clay comes direct from the bank to feeder which feeds directly into the pug-mill.

In making drain tile we are troubled with losses in drying.

and burning. Heretofore tile have been made successfully on an upright machine, the core being supported on a rod protruding thru a hollow auger shaft. On our machine the core is supported by a bridge. Dried and burned tile show no indication of bridge marks. About one-third of the tile are a loss, being cracked from end to end. Some of the cracks were straight but the majority twisted around the tile, this being more common with the smaller sizes. About one-third of the loss occurred in the dryer and the remainder in the kiln. They were dried in a carless drier and burned in a Haigh kiln. The losses in each case occurred where the draft seemed to be the most intense. We are including a sketch showing the lamination planes in a tile.

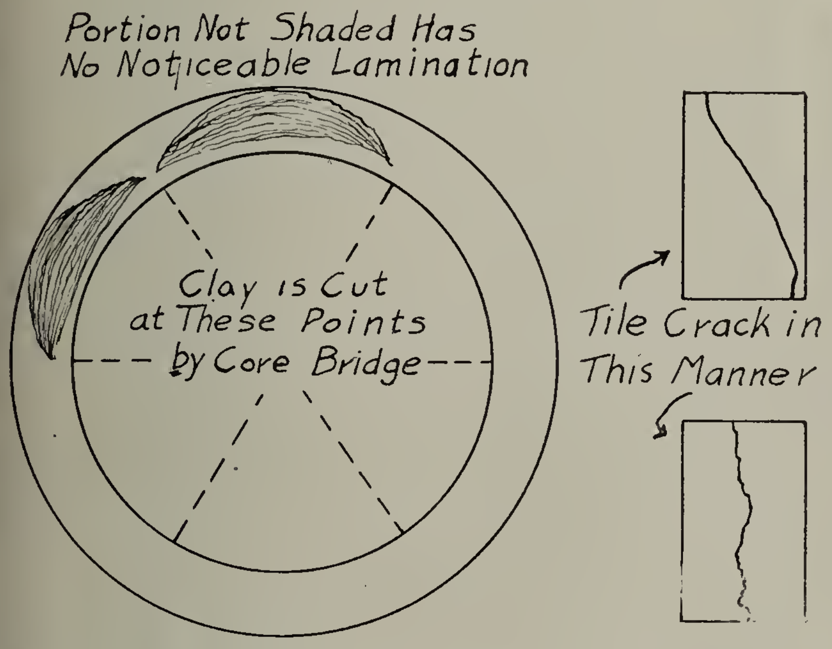
We have not regularly added grog to the drain tile. The grog ground to eight mesh for brick is too coarse for tile, causing the tile to mash when cut. There are also enough fines to shorten the clay so that it does not mold well. Such grog as we have added has seemed to improve the ware in drying and burning, and it is our opinion that by screening to obtain an intermediate grade that it could be successfully used.

It might be of interest to you to know that we have a shrinkage of about seven per cent. in drying and three per cent. in burning.

We feel certain that the trouble is too much taper in the die, as we attended a lecture by Professor Hursh at the Short Course of the Ceramic Department, Illinois University at Champaign on January 28 and he made a special point of the fact that very seldom should a die be tapered more than one-half inch per foot of length. The narrow part of your die varies from $5\frac{3}{8}$ to $4\frac{3}{16}$. This makes a difference of $1\frac{3}{16}$ for the two sides or $\frac{19}{32}$ (.59375) of an inch for one side. On Professor Hursh's theory for a ten inch die the taper should not be more than five-sixths of one-half inch or five-twelfths, or .41667. This increased taper naturally increases the friction of the ware as it passes thru the die.

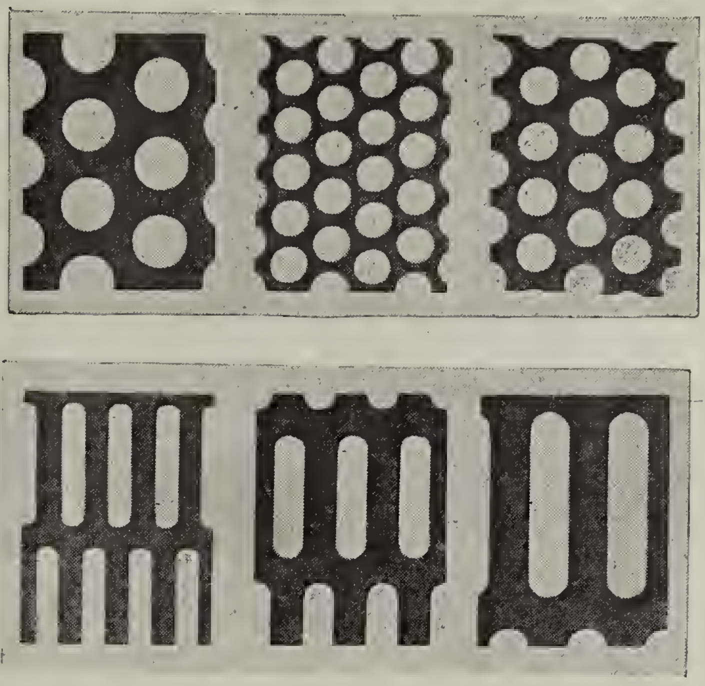
We also are of the opinion that your auger is too far from your die. It is the generally accepted practice to increase this distance whenever the clay is short, as this increases the plasticity of the clay. In your case, with a very plastic clay it seems that it would not be necessary to have this distance so great. We believe that this 11 inches further increases the friction of your material as it goes thru the die. We believe that increasing this distance from 8 to 11 inches as you have done has increased your lamination instead of benefitting it, in view of the large taper that you have on your die.

Large tapered dies are often used where the clay is short in order to increase the bond as it passes. We believe the fact



Lamination and Cracking Troubles in Drain Tile of Illinois Manufacturer.

Perforated Steel Screens



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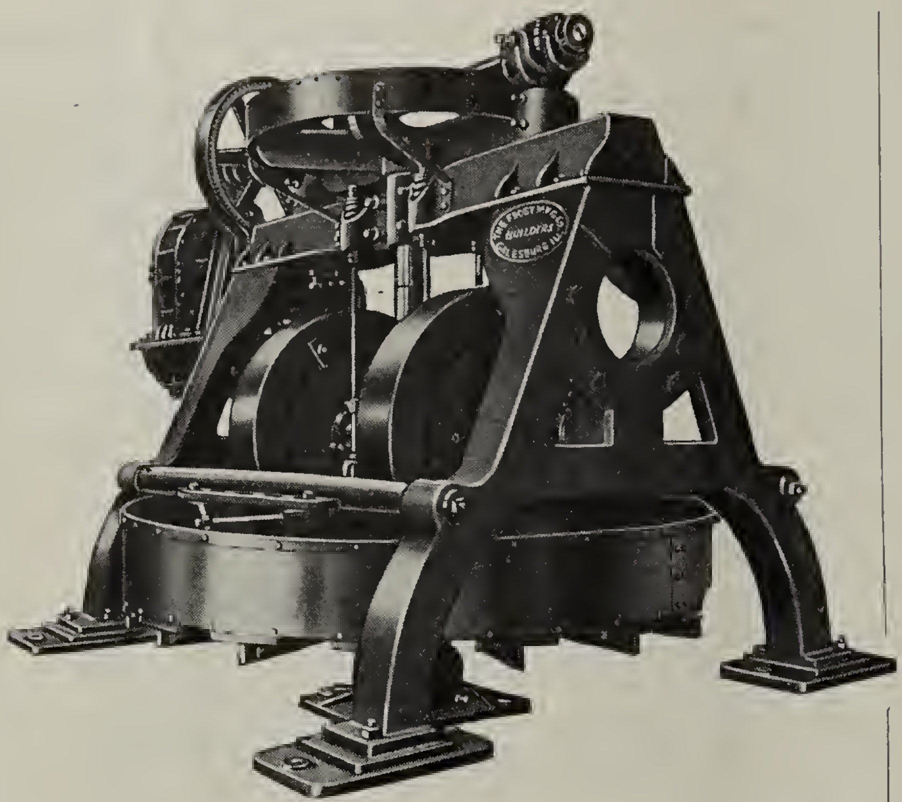

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Service and Workmanship unsurpassable—Let our 10 years' experience be your guarantee.

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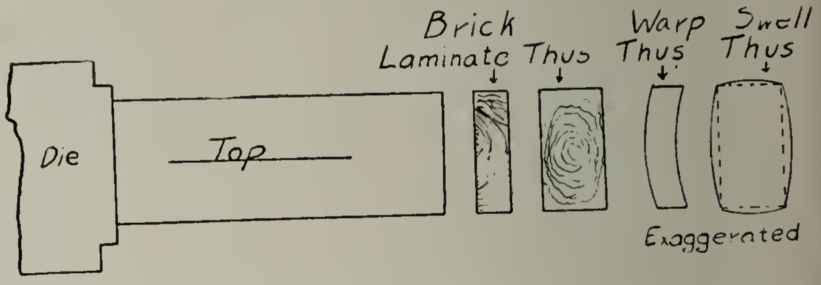
GALLAGHER BROTHERS
Uhrichsville, Ohio

that your bar of clay swells as soon as it leaves the die is evidence of the fact that it is under a high pressure in the die and that this pressure causes friction on the surface of the die. If you could lubricate all six of your liners, or at least the corners of the two last liners, you might find a reduction of your trouble.

We cannot understand why your clay becomes short with too much pugging if its plasticity is increased with soaking. Practically every surface clay that we know of is rendered more plastic by additional pugging.

We believe your drain tile troubles are due to the bridge. Judging from the sketch we are of the opinion that the bridge causes friction, and this produces lamination. It is generally considered hard to make drain tile with a core supported by a bridge, and it seems that the better practice is using a hollow auger shaft with a rod protruding thru it, as you have done formerly. Possibly your losses in drain tile occurred where the draft was most intense because of the fact that altho all the tile were weakened by passing thru the bridge, the other tile were dried and burned at a slow enough rate to overcome this weakness and consequent cracking. In other words, we feel that all of your tile are weakened in this way, and only those that are subjected to the high draft are affected to the extent of showing a crack.



How Brick Will Sometimes Laminate, Warp and Swell.

We would suggest that you reduce the space between your auger and die on your brick machine, and do everything possible to reduce the friction of the clay passing thru the die. We feel that your product will be improved thereby.

We also suggest that since it is necessary to use a bridge for your drain tile machine, that you have a bridge made that will remove the bars as far as possible back of the face of the die. This will give more space for the clay to knit together.

We are very sorry that you did not send us this information a few weeks ago, and we would have strongly advised you to attend the Short Course at the Ceramic Department of the University of Illinois, as you would have obtained information in every department that would have been of great benefit to you. You should now make a notation on your 1923 calendar to attend this course, if one is held.

* * *

WANTS INFORMATION ON DRAIN TILE

1027, Virginia—Will you please give us some information on the following points in connection with the manufacture of drain tile:

1. *Proper method of setting four-inch tile in 30-foot diameter down-draft individual stack kiln.*
2. *Capacity of 30-foot diameter kiln in four-inch tile.*
3. *How high ware is set—12-inch lengths burned.*
4. *Height of bag walls.*
5. *Time required for water-smoke.*
6. *Time required for burn.*
7. *Whether it is customary practice to burn all good hard tile or what per cent. of salmon should be expected.*

For your information we have made around 100,000 feet of four-inch and six-inch tile experimenting and in setting solid kiln of four-inch we have experienced trouble in the ware turning over.

We will give you as much information as possible without further data, in response to your request. We will answer the fourth question first. The bag walls should be built high enough to prevent any material from falling into the fire boxes. Bag walls are also built high whenever the flash from the fire box would damage the outside ware. However, the height of bag walls is dependent very materially on the amount of draft in the kiln. If the draft is poor, high bag walls will increase the time of burning, and cause the bottom courses to be lighter burned or salmon, as spoken of in your letter. We think it almost impractical to set a 30-foot down-draft kiln entirely with four-inch drain tile, unless some method is used to prevent the heads or outside tile from tilting. You might set the entire floor of the kiln six tile high, and then set the outside ring or the heads of the benches with brick. This would prevent any tilting or falling of the tile.

Answering questions one and three, we would say that the proper method is to set the tile as close together as possible, that is, stagger the tile in each course. The tile on the second and succeeding courses should not be set directly above the tile beneath. In other words, every tile should be crossed in order to prevent any falling or tilting. The height to which your ware should be set depends on the material out of which it is made, and kiln conditions. Ordinarily ten feet or ten courses is the average used.

We cannot answer question number two very definitely. We can, however, give you some figures on which to base your capacity. A four-inch tile measures about five inches diameter over all, and 12½ inches long when set in the kiln. This tile, therefore, will occupy about 245.5 cubic inches. However, when the tile are set in staggered courses they will occupy about 90 per cent. of this space, or 221 cubic inches. If you figure the cubical contents of the space occupied by your ware in the kiln, you can easily determine what should be your capacity.

An answer to question five and six would require considerably more information about your ware and the material from which it is made, your draft conditions, and many other points. Four days for water-smoking and burning is about the average of good practice where both small and large tile are produced. In almost all plants the four-inch tile are not set higher than the sixth course, if possible. Usually the upper part of the kiln is filled with six-inch, eight-inch and larger sizes.

Answering your question number seven, we will say that it is certainly the best practice to burn all of the tile hard down to the floor. To do this you must have the proper draft and the correct method of dampering if your draft is excessive. The lower courses, of course, will not be burned quite as hard as the upper courses, but we surely would not burn any drain tile to the quality of salmon.

* * *

WHAT TO CHARGE FOR LEASE

1,028, Tennessee—Will you kindly give me an idea what a brick plant with an investment of $45,000 should lease for by the year? The plant to furnish everything to produce a finished brick, including teams and wagons for delivery. The lessee to furnish fuel, labor, horse feed, in fact everything that is consumed.

The plant should produce 25,000 common brick per day, for about eight months of the year.

Should the lessee take care of all damage and breakage except natural wear and tear?

In figuring the annual lease for a brick plant with investment of $45,000, we must figure first a depreciation charge of ten per cent. annually. This will be $4,500. The investment should, in addition, pay an interest charge which should equal at least ten per cent. The interest on money is lower than this, but there should be at least an additional profit over and above what is necessary when borrowing money. These two charges

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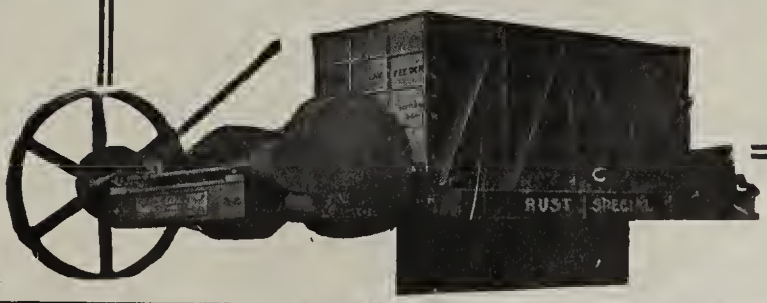

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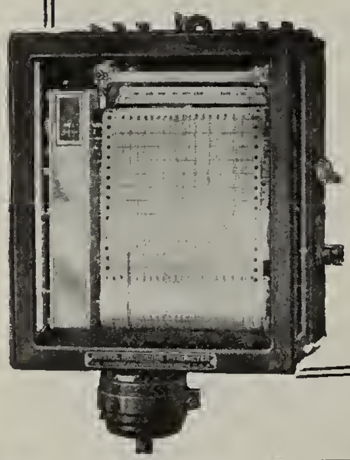

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Bulletins on Request

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Wellsville Ohio

will equal $9,000 per year. We believe that it is better for the lessee to take care of all damage, breakage and natural wear and tear; in other words, the lessee should return the plant at the end of the lease in the same condition as he received it, with natural wear and tear allowed.

There is another item that must be considered, and that is the obsolescence of the equipment. Should the term of the lease be a long one and some of the equipment would have to be replaced, there should be some provision enabling the lessee to realize a percentage of the amount that he invested in this improvement.

If the plant should produce 25,000 common brick per day for eight months of the year, that would equal an annual production of 5,000 M. This amount divided into the $9,000 would equal $1.80 per thousand. Some leases are made in which the lessee pays to the lessor a certain amount per thousand for the output. In this case, of course, the amount received by the lessor is dependent upon the amount of business done.

⁂

REDUCING DRYING TIME OF CLAY

1,029, Pennsylvania—We are desirous of procuring some advice and information in connection with the successful drying of clay under the present conditions at our plant.

Our dryers are smaller than should have been installed when this plant was put into operation but have answered the purpose up to the present time. We are now making plans to increase the capacity of this operation, but due to the limited space which we have, are unable to increase the size of the dryers.

Now, the question which is confronting us is, what is the shortest possible time in which we can dry our brick for setting, without injuring or checking the clay? Is it possible to dry clay without injuring some in a period of two hours' time? Of course you understand that we are manufacturing under the soft mud process, and have any amount of heat to apply if necessary.

Clays are so different in their behavior that it is hard to say without experimenting just what a clay can do. However, we doubt very much whether any clay can be dried safely in two hours—especially brick made by the soft mud process.

You have not given us the present time required in drying nor the kind of dryer and size on your plant. Hence it is hard for us to give you as much service as would be possible had we this data.

Assuming that your space is limited so that you cannot extend horizontally, and that you are now drying in a minimum time, we would suggest that you operate a higher dryer, or a double deck dryer. Of course a dryer that is built high offers difficulty unless proper conditions are had for circulating the air and distributing the temperature. Thus a special dryer would be required.

We do believe that a soft mud brick can perhaps be dried in as low a time as 16 hours, if the clay will stand it.

⁂

DIFFICULTIES IN SCUMMING

1,030. *Kansas—We are having a little difficulty in scumming on our product, even when we add barium. We are also having a little trouble in getting our kilns turned over as rapidly as they should. We require about 200 hours for burning. Can you suggest any remedy for these conditions?*

Assuming that you are using the proper proportion of barium carbonate, we believe that your trouble may be in the burning.

If your water-smoking is too slow or of such a nature that some of the moisture which is smoked out of the top brick is permitted to condense on the cool lower courses in the kilns, this condensation may bring about scumming on the brick in the lower courses.

200 hours for burning seems to be unusually long, and unless the clay is unusual in quality there should be great opportunity for cutting down this burning time immensely.

We would recommend that you have a man who is expert at burning visit your plant to ascertain whether or not your burning time may not be reduced. Very often the fee of a few hundred dollars paid for such services brings returns of thousands of dollars in lower costs.

The Letter Box

A Place Wherein Letters
That Have General Interest
Are Published
and Commented Upon

HOW BRICK ARE MADE IN LOUISIANA

Published below is a letter recently received from a Louisiana subscriber, which is an interesting description of operations at his plant. It is curious to note the old-fashioned methods in use together with the comparatively new system of oil burning.

We have a 40,000 capacity stiff mud factory manufacturing a durable dark red brick. (I am sending you samples by parcel post.) We have Chambers Bros. machinery in the plant and are using an end cutting machine. Our yard is a very old-fashioned one and our methods also. We get our clay from the banks of the Mississippi River and have to haul this dirt over the levee to the mill in carts, using about seven carts with drivers and mules. We also use the old method of trucking our brick to the dry sheds, using seven men to truck and two to rack. Our clay requires about ten days natural drying before we can place the brick into the kiln.

When the green brick are dry enough to set, we use six men rolling and two setters giving them task work and getting very good results. After closing the kilns we begin water-smoking with wood for about 96 hours, and having an oil burning system we connect our burners after cleaning out and firing once more with wood, and then turn the steam and oil on.

I wish to say that this oil burning system is the thing. We use one man to operate 36 burners, having 18 arches. Oil burning renders the work so much easier for the burner that one man can fire with more ease than six can fire with wood. Oil is now costing us $1.85 per barrel delivered here.

Our brick show a nice settlement after about 72 hours burning with oil and then we continue until the brick are thru burning and settling, and I want to say that we get an even settling and a most uniform burn. We can preserve the arches very well by burning oil as we can control the heat so much better than with wood.

We find that there is a great deal of waste heat in the updraft kilns and were thinking possibly of utilizing this waste heat in drying a kiln of green brick with a scheme we have in view. The waste heat from the kiln then would eliminate the water-smoking to a certain extent and thus create a great saving.

It requires about eight days for the brick to cool off and then we take our entrance wall down and begin to haul them to the cars.

Brick are now costing us $6.55 per thousand loaded on the cars. I believe that we are getting off reasonably cheap with the old-fashioned method. The $6.55 is arrived at as follows: fuel cost per thousand brick, $3.15 including the cost of wood and oil; labor, $3.05 per thousand, and mule feed $0.35 per thousand.

* * *

MICHIGAN HIGHWAY CONFERENCE MEETS

The Eighth Annual Michigan Conference on Highway Engineering, which was held at the University of Michigan, February 13 to 17, was voted the most successful conference ever held. The total attendance was 518 against the next largest attendance of 376 in 1921. The program was featured by fine talks by competent men on the many angles of highway engineering.

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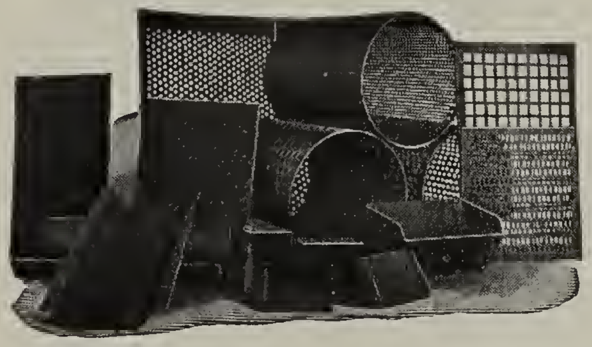

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In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

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EDWARD COFFEY DIES OF APOPLEXY

Edward Coffey, Sr., a brick manufacturer of Beacon, N. Y., was stricken with apoplexy while attending the funeral of his mother-in-law on February 8, and died within 20 minutes. Mr. Coffey was 65 years of age.

H. W. REED PASSES AWAY

Hubbard Wilkins Reed, vice-president and general manager of the Utah Fire Clay Co., died January 30 at the home of his daughter, 619 First Avenue, Salt Lake City. Mr. Reed was born in New York City, December 31, 1849. For a number of years he was engaged in the mining industry, and owned at one time the Camp Bird mine at Ouray, Colo.

EDWARD BROCKMAN SUCCUMBS TO ILLNESS

Edward Brockman, 44 years old, president of the Builders' Exchange in 1921 and widely known among brick and clay men, died at his home, 514 Riddle Road, Clifton, Ohio, February 14, after an illness of two weeks. It was largely the efforts of Mr. Brockman that led to the consolidation of the Builders' Exchange and the Building Construction Employers' Association.

H. C. KLEYMEYER REELECTED C. OF C. HEAD

Henry C. Kleymeyer, president of the Standard Brick Co., Evansville, Ind., was unanimously reelected president of the Evansville Chamber of Commerce at a meeting held on February 26 by the 16 new directors who were picked by ballot the day previous. With Mr. Kleymeyer as president the directors predicted big things for the year, expressing the opinion that his thoro methods, clear-headed business judgment and hard work had been responsible for the splendid accomplishment of last year.

F. W. Lucke and Chas. Deckman, Jr., Enjoying a Game of Golf at St. Petersburg, Fla.

H. H. LUIDEMANN DIES

Herman H. Luidemann, 79 years old, Indianapolis, died recently. He was a retired brick manufacturer. He was born in Dresden, Germany. Surviving are the widow, two sons, Harry G. and Emil F. Luidemann, and a daughter, Mrs. Mary Ruskaup, all of Indianapolis.

J. E. DURKEE MOVES TO MINNEAPOLIS

J. E. Durkee has moved from St. Louis to Minneapolis, where he will take the place of Herbert Plunkett as manager of the Minneapolis territory of the A. P. Green Fire Brick Co., of Mexico, Mo. Durkee went to St. Louis about a year ago, where he was engaged in the fire brick business.

WILL SPEND $3,500 ON IMPROVEMENTS

A water heat system for drying is one of several improvements soon to be installed at the plant of the Alabama Brick & Tile Co., Albany, Ala. The company plans the expenditure of about $3,500 on new equipment. Drain tile of an excellent quality is the chief output of this concern.

PLANT TO BE BUILT AT TUSCALOOSA

It has been definitely announced by the Chamber of Commerce of Tuscaloosa, Ala., that John H. Thress, of Cleveland, Ohio, will construct a brick manufacturing plant in that city during the early part of the present year, initial capacity of the plant to be approximately 40,000 brick per day. A site for the plant has already been obtained and a lease taken on about 16 acres of land in which satisfactory clay deposits exist.

TO PUSH BRICK HOME CONSTRUCTION

The brick business in Birmingham, Ala., is better now than it was during the year 1921, according to John W. Sibley of the Birmingham Clay Products Co.

"Last year witnessed the building of many cheap structures and those of moderate cost. This year the architects are at work on plans for large building projects, which are possible by easier money. There will be a lot of industrial building which has waited for easier money and lower cost.

"We have had overtures from a Cuban firm which wishes to act as agent for brick manufacturers of the district. Inquiry from adjacent states is good.

"Here in Birmingham there are more handsome homes being built than there were last year. The brick residence is becoming more and more popular on account of durability and low cost of upkeep.

"The brick makers are going to make a specialty of pushing the small brick home in place of the apartment; in other words, a home that will take the place of an apartment."

⁂

The California Pottery Co. of San Francisco, has moved its offices to 579 Mills Building.

BUILDING NEW BRICK PLANT

A new brick plant is being established in Santa Maria, Calif., by the Gamble Brothers Co. Machinery has been installed and as soon as the plant is running the full capacity will be 20,000 brick daily. The Gamble brothers state that the clay in the vicinity of Santa Maria is admirably suited to the manufacture of brick.

FRISCO BRICKLAYERS TO MAKE BRICK

The International Bricklayers' Union of America is planning to operate a kiln in San Francisco, following the statement made by officials at a recent meeting that brick can be made and sold

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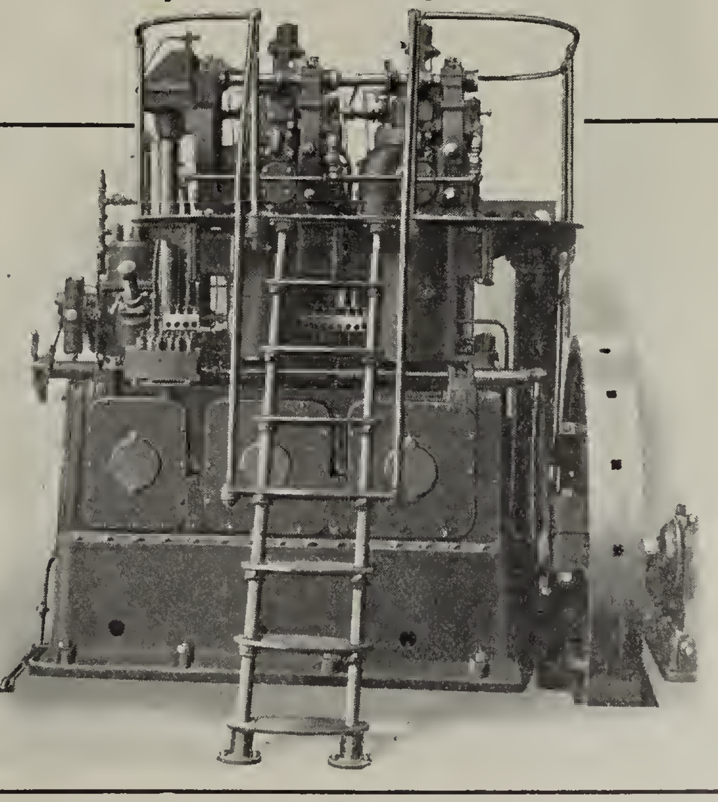

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Kansas City, Mo................. Finance Bldg., Morse Eng'rg Co.
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Minneapolis, Minn................ So. 3rd St., Strong-Scott Mfg. Co.
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at a fair profit for about half what is being charged in that city. It is claimed that because of high local prices very little brick construction is going on, there being only 200 bricklayers in San Francisco compared with 971 in Los Angeles.

FORT COLLINS COMPANY MOVES

The Fort Collins (Colo.) Brick & Tile Co. announce the removal of their offices from 213 Walnut Street to 133 West Mountain Avenue.

DENVER BRICK PRICE REDUCED $2

According to a report, Denver brick manufacturers, at a meeting held the latter part of February, voted to reduce the prices on the two grades of building brick $2 a thousand. The cut makes the present prices $10 and $12 a thousand, respectively. It is said that this difference means a reduction of approximately $60 in the cost of building an ordinary brick home.

NEW CLAY PRODUCTS COMPANY

The Russell Clay Mfg. Co., Wilmington, Del., has been chartered under state laws with capital of $600,000, to manufacture tile and other burned clay products. The company is represented by the Corporation Service Co., Wilmington, Del.

NEW FLORIDA CONCERN

The Hull & Cowan Co., Jacksonville, Fla., has been chartered under state laws with a capital of $100,000, to manufacture brick and other burned clay products. Henry M. Hull is president, and Hugh B. Cowan, vice-president, both of Jacksonville.

L. C. RIVAS FORMS OWN COMPANY

Louis C. Rivas has severed his connection with the firm of Hull & Rivas, Jacksonville, Fla., and will engage in the manufacture of brick and tile under the name of the Louis C. Rivas Co. Office and store room are located at the foot of Julia Street. Mr. Rivas has long been a member of business circles in Jacksonville, and is prepared to give prospective customers the benefit of his practical experience in the clay products line. Robiou Bisbee is associated with Mr. Rivas as office manager.

HOOD TO MAKE MANGANESE BRICK

The B. Mifflin Hood Brick Co. of Atlanta, Ga., has extensive plans for the further development of clay deposits in Georgia, which will be undertaken by six young men of the organization who were sent to the Ceramic Short Course at the University of Illinois held recently.

This company recently opened a $300,000 plant at Perla, Ark., where manganese brick are being manufactured for the first time in the South. Until the opening of this plant, brick of this type had to be transported to that locality from Kentucky, Ohio or Pennsylvania, and it had always been contended that such brick could not be manufactured in the southern states.

* * *

The Lutter Brick Co., Chicago, has increased its capital stock from $50,000 to $200,000.

REPAIRING KILNS

The kilns at the plant of the Clay Products Co., Abingdon, Ill., are being repaired preparatory to the summer's run of hollow building tile.

TO INSTALL CONVEYOR BELT

Business is better than last year at this time at the plant of the Gates Fire Clay Co., Colchester, Ill. The company has made a trestle for dumping coal cars and is planning the installation of a conveyor belt for returning scrap ware to the dry pans. This concern operates 12 months of the year.

GIVE EMPLOYES LIFE INSURANCE POLICY

A life insurance policy was recently presented to each employe of the Acme Brick Co., Danville, Ill., at a general meeting attended by the employes, their wives and families. Group life insurance was explained by representatives of the underwriters, and Douglas F. Stevens, manager of the Acme Brick Co., presented each man with his policy. The gift of these policies was made in memory of Charles P. Stevens, the first president of the company.

PAVING COMPANY STOPS WORK

The Murphysboro (Ill.) Paving Brick Co. suspended operations on February 1 for an indefinite period, probably until spring shipping time, as a result of slack business and the general depression which has affected all industry. Company officials maintain that the wage question was not considered in connection with their action.

GETS LARGE BRICK ORDERS

The Standard Brick Co., Crawfordsville, Ind., announces that in addition to its order for 1,000,000 paving brick received lately, orders have also been secured for 2,500,000 building brick, which will keep the plant running for a considerable time.

VOTE $50,000 FOR IMPROVEMENTS

A stockholders meeting of the Falls Cities Hydraulic Brick Co., Jeffersonville, Ind., was held recently and plans discussed for floating a $50,000 bond issue for the purpose of installing a dryer, kilns and necessary equipment for manufacturing brick. The meeting was held at the office of George Kopp, in the Voight building. The company was formed about two years ago, purchased some old machinery used in the old Hydraulic Brick Plant at Louisville, Ky., but found that it was not in condition to operate. It later purchased some modern machinery, but has never gone ahead with plans for making and marketing brick on a commercial basis. In fact some of the Louisville manufacturers were and still are of the opinion that the backers of the idea will never complete their organization, and really manufacture brick.

BUSINESS PROSPECTS POOR

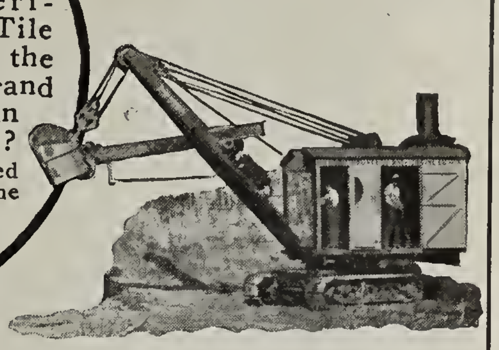
C. H. Newby, manufacturer of brick, hollow building block and drain tile at Lynnville, Ia., finds prospects for business in spring very poor. Selling drain tile to the farmer constitutes the bulk of his business, and it seems as tho they do not feel able to buy it.

KANSAS STATE PLANT HAS MANY ORDERS

The state brick plant at the Federal Prison in Leavenworth has started earlier than usual this season, with more orders for brick than ever before, according to Warden M. F. Amrine. The state plant has orders for 4,000,000 brick this year, 1,000,000 of which are for state institutions which plan new buildings.

STARTS CAPACITY WORK

The Progress Pressed Brick Co., Louisville, Ky., resumed operations and is running full time, and expects to continue on that basis until all available kiln space is filled up, as the



WHY will most experienced Brick and Tile men tell you that the ERIE gives *steadier* and *more reliable* service than any other ¾ yd. shovel? How has the ERIE maintained its leadership ever since the first ERIE Shovel was built?

Constant improvement of one good model

We have built more than 1,600 three-quarter cu-yd. "B" ERIES (by far the largest number of shovels of one size and type ever built by any manufacturer.) This unique experience with one model has worked practically every "kink" out of the ERIE'S design. There has never been a single radical change in the original design of the ERIE Shovel—but there have been many improvements all over the machine adding greatly to its efficiency.

When you own an ERIE you have a machine that has been *perfected* as no other steam shovel was ever perfected before. Which accounts for the unusually steady service the ERIE gives.

The progress made by the ERIE Shovel is well illustrated by the ERIE *lubricated* caterpillar type mounting. It climbs grades as steep as 30 per cent, and travels at more than twice ordinary speed. *Steers by power* from the cab, without the help of a man on the ground. Has many other advantages—all interestingly described in Bulletin B-60. Write for a copy.

BALL ENGINE CO., Erie, Pa., U. S. A.
Builders of ERIE Steam Shovels and Locomotive Cranes

ERIE Revolving Shovels BALL Engine Co. Erie, Pa.

"Sturtevant Drying Systems
Are Economical, Efficient, and Sure"

We maintain a special organization of competent engineers experienced in drying work, as well as a Research Laboratory for conducting investigations to determine correct and economical temperatures, humidities, and velocities of air for the successful drying of your product. No drying process is too small or too large, too simple or too complex for a Sturtevant Drying System.

Our recommendations for your particular problem would not obligate you in any way.

B. F. STURTEVANT CO.
Hyde Park, Boston, Mass.
Offices in all principal cities.

"It enabled us to eliminate six men from the pit at a saving of about $30.00 per day"

That is what Mr. H. W. Shields of the S. P. Brick and Tile Company, Fresno, California, says for his one-man excavator. Read his letter:

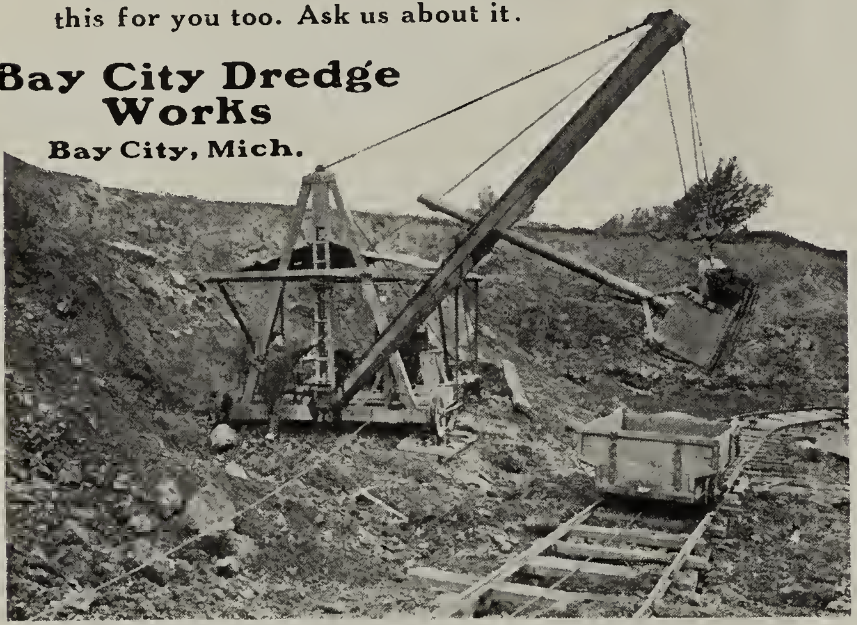
"Answering yours of the 10th with reference to the excavator, beg to advise that we are very well satisfied with the machine. It enabled us to eliminate six men in the clay pit at a saving of about $30.00 per day.

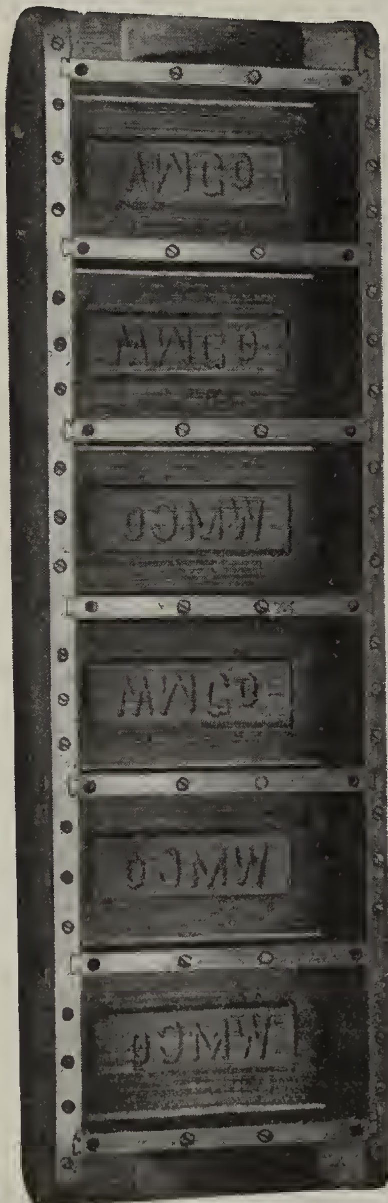
Our bank is 14 ft. deep and of a very hard clay formation. Before getting the excavator, we had to use quite a little of powder. This we also have been able to eliminate. Furthermore, we get an even mixture of clay from the bottom of the clay to the top of the pit, which gives us a much better brick.

We estimate that the machine has paid for itself during the ast season."

The one-man excavator will do this for you too. Ask us about it.

Bay City Dredge Works
Bay City, Mich.





"WELLINGTON" MOLDS

Are made with absolute precision and are perfectly finished. Every one is inspected and guaranteed. Only selected air-dried hard maple and cherry are used, and each mold is solidly riveted through each partition. Shoeing over entire top made of special steel, dove-tailed together.

We are equipped to make molds for any shape with panels, letters, etc., as desired.

Tell us your requirements and let us quote prices.

Write us today.

Wellington Machine Co.
Wellington, Ohio

outlook is so promising that the company believes it will need big production this summer.

OPERATES HALF CAPACITY

A production of about 30,000 brick daily is being maintained by the Klutey-Kleymeyer Brick & Tile Works of Henderson, Ky. This is approximately half capacity, the company normally turning out 60,000 per day. It is expected that business will pick up considerably this year.

CORAL RIDGE REDUCES WAGE SCALE

The Coral Ridge Clay Products Co., Louisville, Ky., reports that business has been considerably more active since February 1, and that the plant resumed operations on February 10. Right now the plant is running full capacity on brick for the immediate future, but it generally runs on brick in the morning and hollow tile in the afternoon. However, hollow tile stocks on hand are better comparatively than the brick stocks, and it looks as if the demand for brick will be the larger in the early part of the season at least.

The Coral Ridge Clay Products Co. has put into effect a new wage scale, which shows a reduction of ten per cent. all along the line. This reduction was effected without any trouble.

BRICK MEN FEAR COAL STRIKE

Brick and tile men in the Louisville, Ky., district are a little concerned over the threatening miners' strike, which it is feared is coming. Altho it is not believed that the strike would last very long, it is believed that such a strike might hamper railroad operation, and general production of building supplies, and make for higher prices of fuel. Right now the brick men are buying very good grade of mine run coal at around $1.50 a ton. The range of prices for coal in the Louisville market starts at around $1 for the cheapest screenings and runs up to around $2.50 and $2.75 for the very best lump coal. Freight rates range from $1.45 to $2 a ton, with some West Virginia costing $2.10 a ton to Louisville. Many industrial concerns are stocking fuel, and demand on the mines is resulting in large increase in operations, but prices are not advancing materially. Operators of coal mines are refusing contracts even when not operating union mines, for fear of sympathetic strikes, and also because they wish to be in position to take advantage of the open market if there is a strike and they are able to operate. The brick trade is a little uneasy, but so far hasn't started buying much coal, but expects to buy enough fuel to run thru April ahead of any strike.

TO MAKE SURVEY OF LOUISIANA

A complete geological survey of the State of Louisiana will begin as soon as a capable man can be found. The geologist will be attached to the minerals division of the Louisiana Department of Conservation, which has been authorized by Governor Parker to make the survey. Business interests have been insistent in their demands for such a survey since the publication of the report of the Federal Bureau of Mines regarding the Monroe gas field. Their motive is to ascertain what Louisiana has in the way of mineral resources for manufacturing purposes, in conjunction with natural gas. Vast deposits of clay in the state and especially near the gas field will be tested to determine their value.

ORGANIZE COMPANY IN MICHIGAN

The Holland (Mich.) Tile & Gravel Co., a $25,000 concern, has been organized with H. Boone as president and George Huntly vice-president and manager. Operations will begin immediately in the manufacture of building and drain tile.

WILL DOUBLE PRESENT CAPACITY

The Grande Brick Co. of Grand Rapids, Mich., will double its output in 1922 by the installation of additional equipment and machinery. This concern had a very successful season, closing the year entirely sold up, and is continuing production thru the winter. The officers of the company are: President, John L. Jackson, Saginaw; vice-president, Charles W. Garfield, and secretary-manager, Henry Joseph.

MANY COMPANIES EXHIBIT AT ST. PAUL SHOW

The importance of the St. Paul (Minn.) building show held in that city during February attracted several brick manufacturers and dealers to install elaborate exhibits. One of the most notable was the booth of the Twin City Brick Co., which was built in the form of an Italian garden with statuary, growing flowers and vines. The Corning-Donohue Brick Co. showed in many effective types and colorings the lines of brick which they handle. Attractive exhibits were also on display at the booths of the St. Paul Builders Material Co. and the Speakes Co., showing the various kinds of brick comprising their lines. The Builders' Exchange and the Master Builders' Association displayed brick to good advantage in the form of a fireplace and parapet walls enclosing their booths. Altogether, these various brick exhibits formed one of the most attractive sections of the show.

⁂

The Walsh Fire Brick Plant in Vandalia, Mo., was closed for a short period during the month of January.

WANTS COUNTY TO BUILD ROAD

A petition is being circulated at Poplar Bluff, Mo., asking the county court to establish and maintain a road to the clay mines of the Missouri Clay Mining Co., near Poplar Bluff. This is one of the biggest business enterprises in Poplar Bluff, with a large payroll and the road is necessary that the industry may be continued.

BUYS KNOB NOSTER PLANT

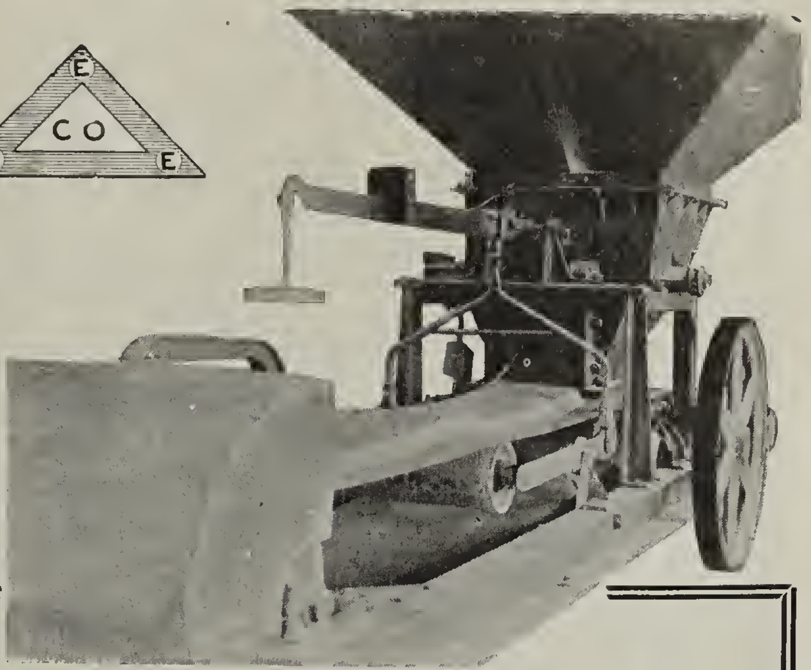
The Knob Noster (Mo.) Brick Co. property has been sold at trustee's sale to Will J. Mayes of Warrensburg, chief bondholder of the concern, who bid $60,000. Mr. Mayes is endeavoring to sell the plant, but if unsuccessful he will operate it himself. There is a very strong demand for brick in the locality, and Mr. Mayes' belief is that the plant will pay if rightly managed.

WELLSVILLE PLANT WORKING CAPACITY

The plant of the Wellsville (Mo.) Fire Brick Co. is being operated now at full capacity six days in the week and a good quantity of material is being shipped out each week. The company at present employs about 200 men and this force is to be augmented if the plans now under consideration materialize. The present operating conditions here are regarded as unusual since there is a slight depression in the fire brick business of the country. The product of the local concern is finding a ready sale in eastern markets, where most of it is shipped.

CAPE GIRARDEAU PLANT BUSY

G. W. Cross, president of the Cape Girardeau, (Mo.) Press Brick Co., says his company has enjoyed a splendid business in southeast Missouri recently and the indications point to a good business in the future. Cross declares that the brick of the local company sell at a less price than almost anywhere else in the country, altho the brick are first class. He said that a concern in the northern part of



Regulates the Quality of Your Ware

The Poidometer insures you a better product through the better mix it gives your clay.

This machine shoulders all the responsibilities of your pug mill men and eliminates them.

Improve the quality of your ware with less cost. Write for our catalogs and let one of the SCHAFFER Engineers call and explain the Poidometer to you in detail. There will be no obligation.

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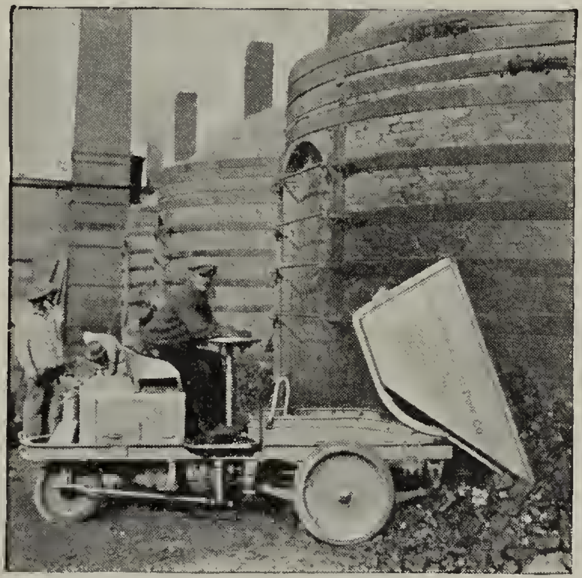
2828 Smallman St. Pittsburgh, Pa.

Kiln Operators Adopt Labor Saving Machine



Clark Tructractor hauling coal to kiln in sewer tile plant at St. Louis, Mo.

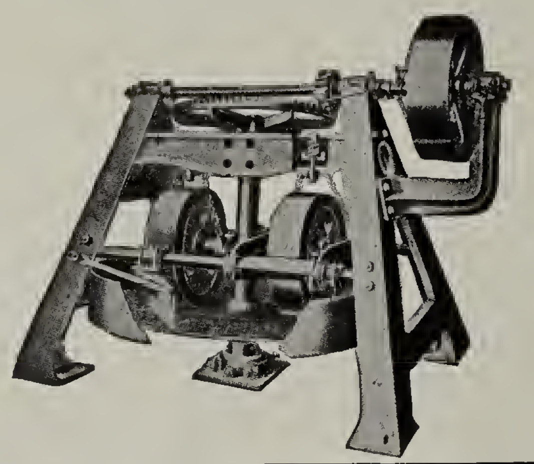
CLARK TRUCTRACTOR CO.
1124 Days Ave., Buchanan, Mich.

Eliminate Your Dry Pan Waste

The clay products manufacturers who will realize large profits later as well as the present, are the ones who install reliable machinery for the elimination of waste.

The EAGLE Dry Pan is built for heavy duty and continuous service. It is adaptable to practically every condition and clay. Requires minimum repairs and upkeep.

May we send you complete information today?

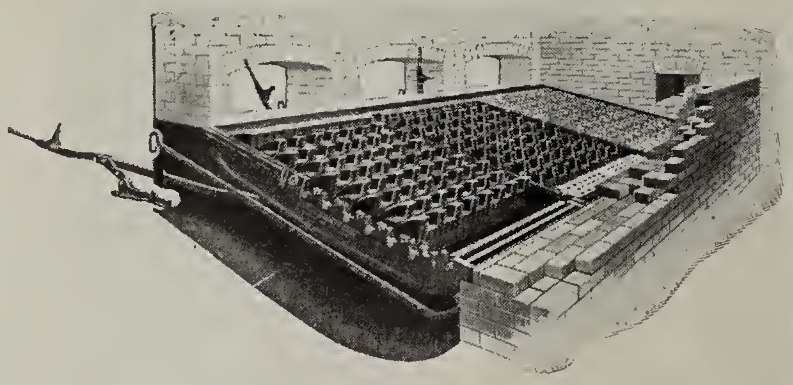


EAGLE IRON WORKS
DES MOINES, IOWA

For Economical Firing in Boilers and Kilns

COKAL HAND STOKERS

These stokers have several advantages which you should investigate before making a decision on the purchase of any kind of stoker. When properly installed they have made unconditional success in every installation, giving satisfaction always.



May we send you our latest literature or have a representative call with a small working model? It will not obligate you in any way whatever.

Just write us.

COKAL STOKER CORPORATION
357 E. Ohio Street, Chicago, Ill.

the state makes brick for a less price, but that the quality of the product is not as good as the local brick. The merit of the Cape Girardeau brick as a building material has won the approval of contractors and builders and many of them recommend the local product in contracts. The company makes and deals in all kinds of brick.

DID GOOD BUSINESS IN 1921

The Aulander (N. C.) Brick Co. made a creditable showing during the past year, in spite of the slowing up of building operations in that period. The usual dividend was authorized at the annual meeting, and extensive improvements in the plant during the next few months were provided for.

NEW BRICK COMPANY IN SOUTH

F. M. Tyack, J. A. Arey and N. G. Arey, of Salisbury, N. C., have recently organized and incorporated the Arey Brick & Lumber Co., of Salisbury, with a capital stock of $100,000. The new company plans to conduct a general brick and lumber business covering southeastern territory, the establishment of a brick manufacturing plant being one of the plans contemplated.

BAUMGARTNER CHANGES NAME

The Baumgartner Bros. Co. of Chatfield, Ohio, have changed the name of their concern to the Chatfield Brick & Tile Co.

CLEVELAND COMPANY BANKRUPT

The Pyramid Brick Co., Cleveland, Ohio, has filed a voluntary petition in bankruptcy thru the treasurer, Clem Speidel, Jr.

STRASBURG PLANTS AGAIN BUSY

The only fire brick works in the Dover-Strasburg, Ohio, field, which has been idle for the last several weeks, has resumed operations. Sewer pipe and tile works also are running.

OPERATING AT HALF CAPACITY

The fire brick plant of the National Fire Brick Co., near Strasburg, Ohio, resumed work after being idle for six weeks. The plant will work four days a week. Half of the normal force is now working.

OPERATING ALMOST AT CAPACITY

The Medal Paving Brick Co., with offices now located at 4900 Euclid Avenue, Cleveland, Ohio, reports renewed activity. Both shipments and production are close to capacity, says C. J. Deckman, of the firm.

CLUB TO VISIT NEW DISPLAY ROOMS

The next meeting of the Columbus (Ohio) Face Brick Club, consisting of manufacturers and dealers in face brick will be held at the office of the Gaddis-Harrison Brick Co., on East Broad street. The members will be shown thru the new offices and the display rooms.

HOCKING VALLEY PLANTS GETTING BUSIER

Transportation agents report an improvement in the clay products industry in the Hocking Valley district, as evidenced by the increased demand for fuel. Much of the work is now confined to paving brick, but as spring approaches gains are being shown in the production of building brick, building tile and flue linings.

CLEVELAND MAY CHANGE BUILDING CODE

Nine associations interested in the construction industry in the Cleveland, Ohio, district are preparing to back an ordinance in the city council which would provide for the alteration of the building code.

The new provisions would create a building code committee of seven technically trained men who would act in an advisory capacity, reviewing all changes in the code before they were presented to the city council.

SHOW BRICK MOVIES TO ARCHITECTS

A moving picture of the manufacture of brick as well as the century old brick buildings in Europe was shown members of the Cincinnati Architectural Club and the architects of the city at the Cincinnati Builders Supply Co. store, 534 Main St., February 20. Views of numerous brick buildings around Cincinnati, planned by local architects, also were shown.

MASSILLON COMPANY DISSOLVES

The Massillon (Ohio) Brick & Tile Co. was dissolved by the stockholders at a meeting Monday night. The company had owned and operated a brick plant at Warmington, several miles south of Massillon. The plant was sold about 18 months ago to the Continental Clay Co. of Canton. W. G. Clementz was president of the company.

MONROEVILLE CLAY TO START SOON

Frank Nutting, of the Monroeville Clay Products Co., Toledo, Ohio, announces that work will be started at full capacity as soon as a release is granted the company by the Federal Circuit Court in Toledo.

The present legal tangle has been of long duration and the company has been forced to postpone starting operations since the first of the year. However, according to Mr. Nutting, there is every reason to believe that a release will be given very soon.

FIRE BRICK SALES INCREASING

Renewed activity of dealers in buying fire brick for customers to be sold in small lots has stimulated business of several fire brick concerns in the Canton, Ohio, district.

One plant which was idle for several weeks, is running full time.

Fire brick plants which sell direct to mills are running only four days a week. The plant which supplies truckload trade, at this time, has an advantage over plants depending on carload sales.

POSTPONE STOCKHOLDERS' MEETING

The annual stockholders' meeting of the Columbus Brick & Terra Cotta Co., of Columbus, which has a plant at Union Furnace, Ohio, which has been idle for about four years, was scheduled for March 6 at the office of the secretary, F. F. Hoffman, 85 North High St. Owing to the fact that a large block of stock had been optioned by the Central Refractories Co., the validity of voting this stock was questioned and the meeting was postponed until March 10. J. Russell Kilbourne is president of the corporation.

FUTURE OF SEWER PIPE PLANTS BRIGHT

In preparation for better business with the event of spring the clay products industry in Akron, Ohio, is now operating at capacity. Reports from nearly all of the local clay products concerns show that they have swung into full-time operation, employing their normal number of workmen.

John Starr, treasurer of the Robinson Clay Products Co., said recently that the industry is looking for a big program

OSGOOD

OSGOOD ¾ and 1 cu. yd. Revolving Shovels are noted for their ability to produce more yards at less cost due to their rigid and sturdy construction, simplicity of operation and long life.

Every casting on Traction or Continuous Mountings is of open-hearth, annealed cast steel. Quick acting power steering devices, Horizontal Hoisting Engines, Vertical Submerged Tube Type Boilers and the fact that Crane, Clamshell or Dragline features can be embodied in their Construction are IMPORTANT TO YOU.

The OSGOOD Company
Marion, Ohio, U. S. A.

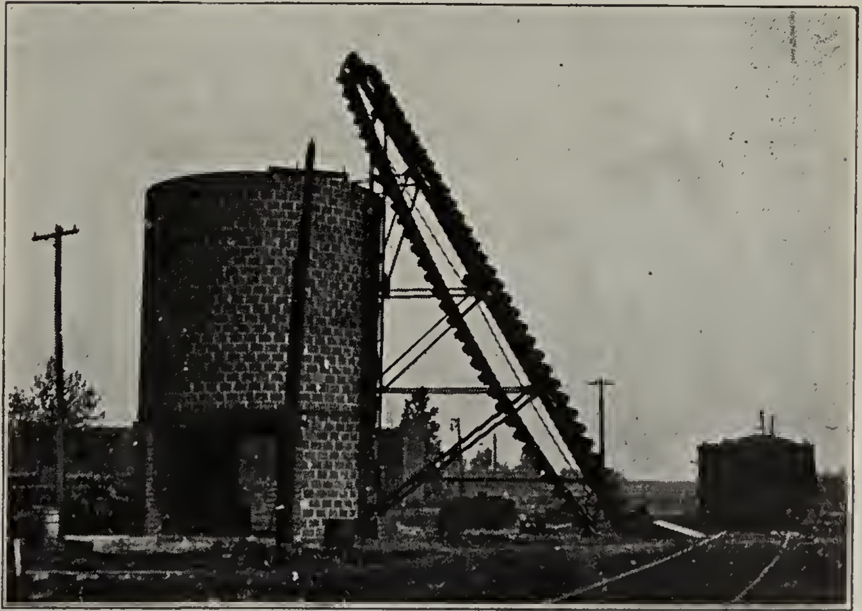
THINK WHAT IT WOULD MEAN IN SAVING IF THE 15,000,000 TONS OF COAL USED BY THE CLAY PRODUCTS INDUSTRY YEARLY, WERE UNLOADED BY THE

SUNBURY
AUTOMATIC CAR UNLOADER

Sunbury Automatic Car Unloaders have proven that they are a paying investment, unloading coal and other loose materials at the rate of from 30 to 50 tons per hour at the least, and requiring the services of only one man to operate. Think what this method means over the old, slow and costly method of having two, three or four men to do the work which then requires a full day or more.

Tell us your coal handling requirements and we will show you how a Sunbury will fit in with your plant equipment

THE SUNBURY MANUFACTURING CO.
SUNBURY, OHIO



of sewer work to be started in towns thruout the country this spring. Sewer work, according to Starr cannot be held off much longer.

CONTINENTAL ELECTS OFFICERS

At the annual stockholders' meeting of the Continental Clay Co., which was held about the middle of February, Warren B. Ferris, of Columbus, Ohio, was elected president in the place of J. A. Calhoun, of Canton, who resigned, but still remains on the board. Directors were elected as follows: Warren B. Ferris, C. E. Berridge, P. A. Berry, Frank H. T. Potter, H. V. Crooks, J. A. Calhoun and A. O. Eberhart. Frank H. T. Potter, of Chicago, was elected vice-president and C. E. Berridge, secretary-treasurer. All of the four plants of the company are now shut down and necessary repairs are being made. It is the plan to open them by April 1 at the latest and some of them earlier.

MAINTAINS CAPACITY PRODUCTION

The Cleveland (Ohio) Brick & Clay Co. is going ahead at practically capacity at the present time, according to C. U. Henderson, production manager. A new dry pan, elevator, and screen have been installed since the first of the year which are material aids to production.

Mr. Henderson makes no secret of the fact that this winter is about as dull as other winters, but that is natural with the industry, and indications as well as future orders promise a brisk selling season.

The Cleveland Brick & Clay Co. operates one of the most up-to-date plants in the country. Several years ago the entire establishment was damaged by fire. Replacement has been made with the most modern systems and devices and it is the intention of the company, say officials, to expand gradually, installing only the best equipment.

EDUCATING PUBLIC TO BETTER HOMES

The House-Taylor Co., of Cleveland, Ohio, has instituted a campaign to teach prospective home builders the chief essentials in modern home building. E. J. House, president of the company, lays particular stress on the fact that the modern home should have utility rather than appearance as its main purpose.

"We are strong for the brick home," says Mr. House. "It costs only about 6 per cent. more than other construction and the difference is easily saved in the upkeep during the first few years. Besides if brick homes are built it will release a great amount of lumber for that part of construction where only lumber can be used.

"The average man knows little about construction and some speculative builders take advantage of this. As part of our campaign we are undertaking the education of the prospective home builder in details which do not appear at a glance."

TO ENLARGE OHIO STATE BRICK PLANT

The enlargement of the Ohio state brick plant at Junction City in order that employment can be given to 250 prisoners in the Ohio Penitentiary is to be started at once, according to H. S. MacAyeal, Ohio director of Public Welfare. Several new buildings will be erected at a total expense of about $60,000, which amount was appropriated at the last session of the Ohio General Assembly for that purpose. It is believed that the demand for brick during the coming season will be the best since the opening of the state plant and efforts will be made to supply the demand. Orders from the Highway department already are large and in addition a large number of building brick will be sent to the Ohio State University to be used in the construction of new buildings. Modern machinery is to be

Burn Your Ware With
PRODUCER GAS

Hand-Poked and Mechanical Producers, Rotary Dryers and Calciners are our specialty.

Expert engineering service is yours if you are contemplating burning with producer gas, or if your present system is not satisfactory.

We have been in this business thirty years.

We also manufacture stacks, tanks and other steel plate work.

Write us today

DUFF PATENTS COMPANY
INC.
Frick Building PITTSBURGH, PA.

REG. U.S. PAT. OFF. TRADE JENKINS MARK Jenkins Bros

STRENGTH

Fig. 370, Jenkins Standard Brass Gate Valve, screwed.

Jenkins Gate Valves with their extra weight and strength stand the strains of expansion and contraction of piping, and thus prevent seat distortion, a common fault with cheap, lightly constructed valves.

Full unobstructed opening.

Solid wedge, double faced type that eliminates use of complicated levers and internal wedging devices.

Standard, medium, extra heavy patterns.

Know genuine Jenkins Valves by the signature and Jenkins "Diamond" cast on the body.

Supply houses everywhere.

JENKINS BROS.
New York Boston Chicago
Montreal Philadelphia London

Jenkins Valves
SINCE 1864
2425-J

installed when the buildings are completed. The work of constructing the additions will be under the charge of J. B. Lorimer, who will be transferred from the London Prison farm for that purpose.

REAL BUSINESS TO START IN MARCH

"I expect a brisk, even booming business next month," said E. C. Rankin, vice-president of the Evans Builders Co., Fourth and Plum Sts., Cincinnati, Ohio, and head of the local sales office of the company, February 20. "The present lull in sewer pipe is due to the fact that the state railroad commission on the first of February ordered a 25 per cent. reduction in the transportation of sewer pipe within the state of Ohio, which will be effective on February 28. Naturally as soon as word of this action of the commission became broadcast over the state, buyers held off ordering sewer pipe until March so as to get the benefit of this reduction in freight charges which in many instances will amount to a considerable sum. We have notified our customers of this reduction, but even tho they know that after the 28th there will be a reduction in the cost of the transportation charges, some have purchased for February delivery. That looks good for general business. In fact, I don't see how building operations on a large scale can be held off much longer. There has been no building of any consequence for some time, about four years, and it is due to break right now."

The Evans Builders Co. has added two new men to their force, R. D. Mansfield, formerly with the U. S. Gypsum Co., and E. B. Townsend, formerly with the Louis McNutt Co.

OKLAHOMANS FILE RAIL RATE COMPLAINT

Shippers of Oklahoma, thru the Corporation Commission, have filed before the Interstate Commerce Commission in Washington what is believed to be the most far-reaching railroad rate complaint ever presented. 522 railroad companies are named as defendants, involving rates on all traffic moving in intrastate and interstate commerce within the states of Oklahoma, Texas, Arkansas, Kansas and Missouri south of the Missouri River, and Louisiana west of the Mississippi River, and also on traffic between points in such territory and eastern and northern destinations served by transcontinental trunk lines. Commodities which have already received readjustment or are under consideration thru other cases presented to the Interstate Commerce Commission, are excepted in this complaint. Common brick is included in this list.

* * *

G. W. Starr, Powers, Ore., Coos County, writes us that he plans to start in the brick, tile and pottery business at Powers in the very near future, and would like to get full information regarding machinery and chemical analysis.

NEW CASTLE CONCERN TO START SOON

The New Castle (Pa.) Brick Co. will resume operation as soon as needed repairs can be made. Orders have been received which will keep the plant busy for some time.

WORK BEGINS AT ORVISTON PLANT

The Centre Brick & Clay Co. at Orviston, Pa. is again running after a recent shutdown, resulting in much joy among the employes and their families, who were beginning to feel keenly the need of work and funds.

BUILDS THREE NEW KILNS

The Glen-Gery Shale Brick Co., Reading, Pa., has recently completed the construction of three new kilns at its plants for increased capacity for the spring season. The

OUR FIRE CLAYS
are of several grades —

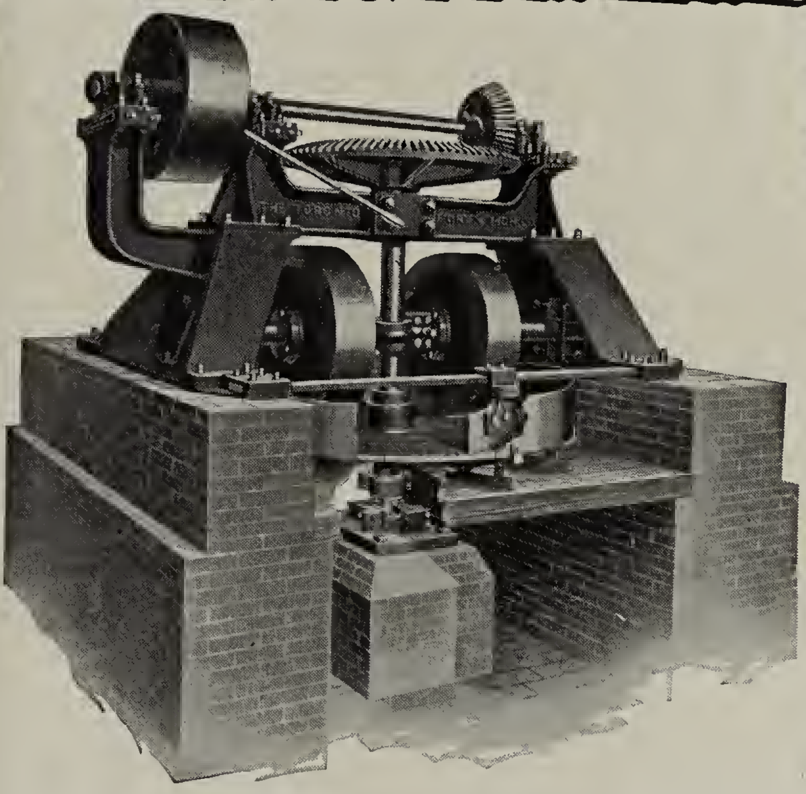
One grade has the strength to withstand sudden changes in temperature such as is required for roofs of malleable furnaces, or intermittent heatings and coolings such as needed for saggers.

Another grade has great strength necessary for sanitary ware and pottery.

A third grade withstands slagging action such as is encountered in foundry and blast furnace linings.

Each has been supreme in its field for 40 years

The ANNESS & POTTER FIRE CLAY COMPANY
Main Office & Works: Woodbridge, N. J.
New York City Office: Longacre Building



10 ft. Standard or Type "B" Dry Pan

This Pan will help you reduce your costs as well as increase your production.

Write for information about it and other TORONTO machinery.

The Toronto Foundry & Machine Company
Toronto, Ohio

The Nonpareil Insulating Brick are seen about half way up in this terra cotta kiln of the Midland Terra Cotta Company, Chicago, Ill.

Insulated Kilns Do *Better* Work

SINCE kilns that are insulated with Nonpareil Brick use less fuel, the *economy* of insulation seems to be its strongest point. But it is equally important that, in addition to saving fuel, the insulated kiln turns out *better work*—and it is easy to see why.

With the loss of heat by radiation and conduction practically cut off by the Nonpareil Insulating Brick in the walls and crowns, the inside temperature is much more constant and can be more accurately controlled. Temperature variations—underheating at certain points and overheating at others—are eliminated. The result is a *more uniform product* and less waste or spoilage due to uneven burning.

Nonpareil Insulating Brick are made in standard fire brick shapes and sizes and are built right into the construction. They are strong enough to withstand the strains of expansion and contraction and, when properly installed, are not affected by high temperatures. Furthermore, they are reasonable in cost and easy to lay—a thoroughly practical and remarkable efficient and economical kiln insulation.

or full information, operating records, specifications, etc., write for the 72 page book, "Nonpareil Insulating Brick," and a sample. No charge.

Armstrong Cork & Insulation Company
149 Twenty-fourth Street Pittsburgh, Pa.

Also manufacturers of Nonpareil High Pressure Covering for steam lines, feed water heaters, etc.; Nonpareil Cork Covering for drinking water systems, brine and ammonia lines and cold pipes and tanks generally; Nonpareil Corkboard Insulation for cold storage rooms; Nonpareil Cork Machinery Isolation for noisy machines, and Linotile and Armstrong's Cork Tile for floors in offices, residences, etc.

Nonpareil Insulating Brick

For Kilns, Boiler Settings, Etc.

output, heretofore, has averaged about 200,000 shale brick per day.

FIND FIRE CLAY AT SLATE RUN

A deposit of fire clay has been discovered on state forest land seven miles from the village of Slate Run, Pa., and mining operations will be begun in the spring by H. W. Carson and W. H. Campman of Slate Run, who will manufacture brick. The vein varies from 11 to 17 feet in thickness, and covers a large territory.

TO RESUME MINING OF CLAY

The York Clay Co. has secured a lease to resume operations at the Rockey clay quarry near Hunter's Run in Dickinson Township, Pa. The quarry was formerly worked by this concern, but ceased operations several years ago when the lease expired.

CASTLE BRICK PLANT TO START SOON

The Castle Brick Plant situated northeast of New Castle, Pa., will resume operations in the near future. Orders have been received which will keep the plant in operation for some time. The plant will be opened up as soon as needed repairs can be made.

HARBISON-WALKER CUTS CAPITAL STOCK

At a meeting of the board of directors of the Harbison-Walker Refractories Co., held on February 24, a resolution was adopted to decrease the capital stock of the company from $36,000,000 to $30,000,000, the decrease to be made by retiring and cancelling $6,600,000 of the preferred stock now in the treasury of the company. A meeting of the stockholders will be called for May 15 to take action on the proposed decrease.

NATIONAL FIREPROOFING HOLDS MEETING

At the annual meeting of the stockholders of the National Fireproofing Co., President H. M. Keasbey stated that conditions in the building trades indicated that 1922 will be a normal year. He stated that during the last month the company had received twice as many orders as for the same month in 1921 and that inquiries for building tile received so far this month were keeping a large force busy answering them. He said that the company spent $300,000 during the year on remodelling of plants, and that all of them are now virtually rebuilt. The new East Liverpool, Ohio, plant would be one of the most complete in the country and the most efficient, he said. He also said that unfilled orders on the company's books as of January 31 last showed a material increase over the same period one year ago.

Sidney F. Heckert, who presided at the meeting, said that if the expected business materializes the present year would be a most satisfactory one. The following officers and directors were elected: H. M. Keasbey, president; C. G. Jones, secretary; J. P. Robbins, treasurer, and W. M. Scaife, E. W. Gwinner and E. H. Straub; directors.

ELECT BUILDERS' EXCHANGE OFFICERS

The Builders' Exchange of Memphis has elected and installed its new officers: George C. Kaucher, Exchange Bldg., president, succeeding Al Pritchard; Wm. Riker, vice-president; M. L. Black, second vice-president; J. W. Williamson, treasurer. E. W. G. Meers, executive secretary, submitted his annual report. The exchange will be active in entertaining the National Association of Builders' Exchange at Memphis February 20-23.

FURNISH MANY BRICK IN KNOXVILLE

That the Knoxville (Tenn.) Brick Co. has furnished 75 per cent. of the brick used in buildings erected in Knoxville in the last 25 years, is the belief of O. A. Coleman, secretary and treasurer. $5,000 worth of pressed brick used in the recent remodeling of the American National Bank building is included in this percentage. Among other buildings made of brick from the kilns of this concern are the Knoxville High School and the Farragut Hotel. This plant has a capacity of 50,000 common and 20,000 pressed brick a day.

FINDS MEXICO GOOD MARKET

The International Brick Co. of El Paso, Texas, is planning to handle its greatest business during the present year, due to a general resumption of building activities in El Paso and other southwestern cities. Normal production at the plant will begin within a few weeks, furnishing employment to many workmen now idle.

14,000,000 brick were manufactured during 1921 by the International Brick Co. Of this number, 75 per cent. was used in El Paso, 20 per cent. was shipped to Arizona, New Mexico and West Texas, and five per cent. was consigned to points in Mexico north of Chihuahua City. Jerry F. Driscoll, general manager of the plant, states that each locality prefers a certain style of brick. Arizona builders usually order pressed brick; rough texture brick is most popular in New Mexico. When asked what kind of brick was most in demand in Mexico, Mr. Driscoll replied, "Any kind, just so they're red."

SALT LAKE COMPANY RESUMES WORK

The Salt Lake Pressed Brick Co. of Salt Lake City, Utah, resumed operation of its plant on February 20, providing employment for about 100 men. J. P. Cahoon, general manager, says that more building activity is expected shortly.

INSTALLS MODERN SAW MILL

The Provo (Utah) Pressed Brick & Tile Co. has recently installed a modern saw mill, and expects to saw for its own use 20,000 feet of lumber. This lumber will be used in the erection of a large dryer. S. H. Belmont, manager, announces that the plant is now in a position to handle a great deal more work than ever before, and splendid business is expected during 1922.

MAY REOPEN SUMAS CLAY MINES

The Denny-Renton Clay & Coal Co., Seattle, Wash., is considering the reopening of the Sumas clay mines. R. A. Swain, general manager of the company, C. Alexander, engineer; W. E. Lemley, general superintendent of the properties of the company; Mr. Sedgewick, appraiser of properties of the Chicago, Milwaukee & St. Paul Ry., and N. W. L. Brown have been looking over the properties. The establishment of a modern plant for the manufacture of brick and other clay products will be considered.

TWO W. VA. PLANTS START WORK

A report from Wheeling, W. Va., states that the Suburban Brick Plant at Bellaire, which has been shut down for some time, was to resume operations February 8, and the Standard Stone & Brick Co. would terminate its period of idleness on February 10.

BRICK PAVEMENT SERVES 38 YEARS

Charleston, W. Va., claims the distinction of being the first city in the United States to use brick for paving. In 1871 Summers Street was paved with building brick, which served

Distance Is Eliminated

Where STANDARD CONVEYORS are used there is no such thing as distance.

The slow and costly methods of manual handling are abolished. Common labor costs are cut to the minimum and skilled laborers are kept busy. There is no more delay waiting for materials.

And remember this is all done by GRAVITY—the universal FREE power. Decide today to take advantage of it.

Write for complete information.

STANDARD CONVEYOR CO.

NORTH SAINT PAUL
MINNESOTA

satisfactorily for 38 years. The first brick laid in the street is on exhibition at the state museum in Charleston, and shows that not more than one inch was worn away during its generation of service. Several years later Quarrier Street was paved with brick, laid on a base of three inches of sand, one inch of tarred oak planks, and a second layer of sand, and this pavement is still in good condition after 27 years.

DESIGNS NEW TYPE OF KILN

Labor and fuel cost will be cut in half, it is stated, by a new type of brick kiln which has been invented and patented by Robert F. Kyle, 521 Ninth Avenue, Huntington, W. Va. The kiln, which is a continuous one, has a capacity of 72,000 brick per day. It is 36 feet long, and the cars pass thru the tunnel at the rate of one car length per hour. Each car holds 3,000 brick.

The heat current is drawn diagonally thru the carload of brick towards the single outlet in the center of the tunnel. When the car passes the outlet it meets another diagonal current of heat from the opposite end of the kiln. This is the new idea, by which it is claimed brick will be burned in 42 hours.

Mr. Kyle has had much practical experience in brick making. Besides working extensively in this country he helped establish brick plants in Peru. In addition to the kiln, he also expects to receive patent papers on an improved dryer in the near future.

FORM CLAY COMPANY AT KENOSHA

The Wisconsin Clay Products Co., Kenosha, Wis., has been granted a state charter for the manufacture of brick, tile and other clay products. The company is incorporated for $100,000. Joseph Orth, Michael Laueresen and Gottlieb Schaefer, all widely known to the building trades in Kenosha, are principal stockholders.

SHERIDAN COMPANY TO MAKE SILO TILE

The Sheridan (Wyo.) Pressed Brick & Tile Co. was able to run this winter for the first time due to new kilns which were installed during the past year. On account of the cold weather in February the plant was closed down, and expected to resume in March. Drain tile and hollow building tile, of a kind impossible to burn in the old square kilns, are being turned out to supply a good demand. The next burning will contain a large lot of hollow silo tile, for which there is a growing call.

ANDREW DODS SAILING TO EUROPE

Andrew Dods, president of the Ontario Sewer Pipe Co., Mimico, and Mrs. Dods sail from New York on the White Star liner Arabic for the Mediterranean on March 8.

L. E. SHAW VISITING AMERICAN PLANTS

L. E. Shaw, of L. E. Shaw, Ltd., brick manufacturers, Avonport, N. S., has been spending some time visiting the brick plants of Pennsylvania.

OTTOWA COMPANY TO MAKE DENISON TILE

Merkley's Limited, Castle Blag, Ottowa, have made arrangements with the Interlocking Tile Co., 32 Toronto Street, Toronto, to manufacture interlocking or Denison tile in Ottowa.

WAGES IN ALBERTA REDUCED TEN PER CENT.

Alberta Clay Products Co., Ltd., Medicine Hat, Alta, has found that labor is more efficient than a year ago and wages have bene reduced ten per cent. A good business in small-sized sewer piper was done in 1921, but the demand for large sizes and for building tile was small. Prices are lower, but the general feeling is that business will be better this year.

TORONTO PLANT BUSY

F. B. McFarren, manager of the Interprovincial Brick Co., Ltd., Toronto, reports an increase in the volume of business, assuring continous operation of their plants at Cheltenham and Milton. During December, 1920, coal prices dropped considerably and it was possible at that time to make some price adjustments. However, for the company's financial year ending June 30, 1921, fuel costs per thousand exceeded the previous year's costs by 87 per cent. Labor costs during the year had been reduced by 15 per cent. Practically no large work was done in 1921, but there was a fair amount of housing work. Freight rates had a limiting effect on the ability to compete in many markets.

BATES TALKS TO CANADIANS

Dr. P. H. Bates, head of the clay products division of the United States Bureau of Standards at Washington, gave an interesting address on "Structural Ceramic Products," at Toronto, Can., on February 18. He referred to the work being done by the Bureau and stated that they were investigating the possibilities of cheapening the cost of building materials without lowering their practical quality, with a view to alleviating the present slump in the building industry, due to the excessive cost of materials.

He pointed out that to the layman ceramic art meant little more than "decorated pottery." Of the many schools which had courses in ceramics, almost all dealt only with the decorative phase of the subject. The ceramic industry, he said, was one which was primarily concerned with clay, but included other materials which had the property of "sticking" when mixed with water and dried.

The growth of the brick industry, Dr. Bates said, was due to the fact that small capital was required and that almost anyone could make brick. It was only since the income tax was applied that brick manufacturers had found they were charging themselves nothing for their clay.

The term "tile," he stated, was very broad, including roofing tile, hollow wall tile, floor tile, interior wall tile and drain tile.

The method of making terra cotta in plaster casts made from architects' drawing was described.

* * *

THE BUILDING SITUATION

(*Continued from page* 376)

Building activity continued steady thruout the Southeast during February, especially in the larger industrial centers, it being generally estimated by contractors and building supply dealers that construction the first two months of 1922 in all southeastern states has been about 75 to 85 per cent. better than the same two months one year ago. All signs indicate continued building activity thruout the section all during the year. While much of the construction is in new homes, there is a great deal of work going on in larger buildings such as schools, churches and brick business and store buildings, and a considerable number of homes are being constructed of brick due to comparatively high lumber costs and the added freight burden. The export demand for brick has been good since the first of the year, considerable quantities going to Cuba, and to Mexico and Latin American countries.

Machinery and Equipment

Descriptions of Machinery and Accessories and Detailed Announcements that Our Advertisers Believe Will Interest Our Readers

Joins Hadfield-Penfield Organization

Arthur Whitcraft, M. E., well and favorably known in the steel field has assumed charge of the manganese steel sales department of The Hadfield-Penfield Steel Co., with headquarters at Bucyrus, Ohio. Mr. Whitcraft was for a number of years successively with the Marion Steam Shovel Co., American Locomotive Co., and New York Central Railroad. He was in charge of erection, operation and supervision of heavy excavation machinery.

He was for 12 years with the American Manganese Steel Co. as a sales engineer engaged in the design, application and sale of manganese steel castings. His experience covers every phase of the work from the moulding floor thru the machine shop to the service of the castings sold.

He has had much to do with the development of new applications of manganese steel and in widening the field of its commercial use and devoted several months' time to the shop during the development of the first electric manganese steel.

During the war period he was captain in ordnance department and was engaged in the work of mounting on railway cars the 12 inch and 14 inch naval guns which were the only big American guns to reach the French front, where they did much to bring the war to a close. Naval shells made by The Hadfield-Penfield Steel Co. were used in these big guns. Mr. Whitcraft also superintended the mounting of 12 inch mortars and 8 inch Barbette carriages on railway cars. He was in charge of rifle grenade plant and aerial drop (demolition) bombs.

Mr. Whitcraft is at present a captain in Officers' Reserve Corps, U. S. A., commanding 401st Ordnance (G. H. Q.) Maintenance Company.

⁂

CONCERNING GREEN MORTAR COLOR

The question is often asked where a good green for cement can be obtained. That is what J. P. Cullen & Son, Janesville, Wisconsin, have just written the Ricketson Mineral Paint Works, Milwaukee, Wis.:

"In reference to the buff and black mortar colors you shipped us for use on the Janesville High School, we wish to advise that the mixture of these two colors to produce the desired green proves very satisfactory and we can get any shade of green required by the use of these colors. The job is under way and must say your colors are giving splendid satisfaction.

We used these two colors in the erection of St. Patrick's School here, in 1920, and produced a green mortar color similar to what is being used on our present job.

⁂

REDUCING PRODUCTION COSTS

Maintaining profits on a falling market does not require genius, but it does call for close figuring, and there is only one way it can be accomplished—by reducing production costs.

Among the available economies is that of fuel—a considerable one. To economize on fuel you must be able to use the cheap fuels, local or otherwise, to purchase any coals that may be most available in your market, and also avoid the large losses from incomplete combustion, too frequent cleaning of the fires, loss from unconsumed gases and carbon in the stack, and an ash-pile rich with unconsumed coal.

Where the old style stationary grate-bars are used, all these losses occur, and yet many of our readers balk at the initial expense of the installation of modern and economical grates under their boilers, although, as a matter of fact, this expense is often made up several times each season by the saving in fuel.

Reducing the Cost of Drying Dipped Dinner Ware

The Maddock Pottery Co., Trenton, N. J., manufacturers of "Lamberton" China, recently installed a

"HURRICANE" Automatic Mangle

in order to reduce their drying costs, and at the same time improve the high quality of their ware.

It is interesting to note the efficient work accomplished since the installation of this machine. The use of a continuous, automatic process greatly decreases the cost of handling, and also eliminates much finger marking and scarring. In proportion to the amount and quality of ware turned out, the cost of steam and power is remarkably low.

Shall we send you our new folder on modern Ceramic Drying Methods, or have an engineer to call and go over your particular problem with you?

The Philadelphia Drying Machinery Co.
3351 Stokley Street Philadelphia, Pa.

The Gateway to Better Things

BOOKS

The Master Workman has a Master Mind—he knows perfectly his own merit, and in order to increase his knowledge, he studies the methods of other men— in the only way that he can—in books. If you would be master of your work you must read and know what others know.

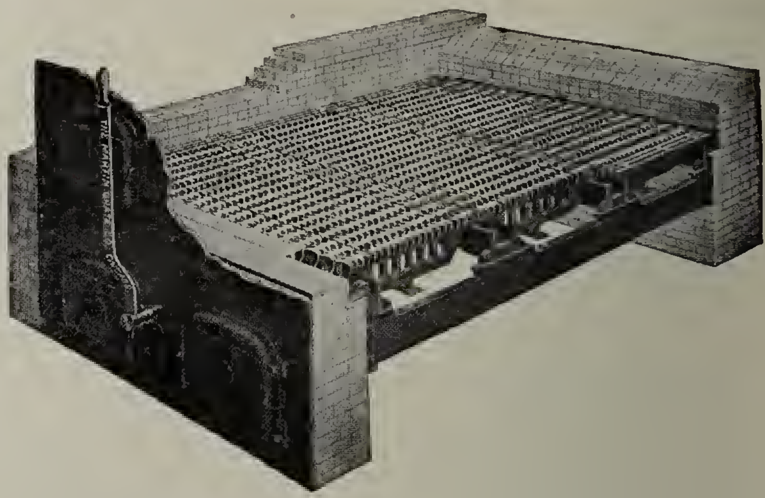
Bricklaying in Modern Practice	1.20
Bricklaying, Rudiments of Practical	.75
Bricklaying System	4.00
Building Construction and Superintendence, Part 1, Masons' Work	7.00
Ceramic Industries (A Treatise on) E. Bourry	6.00
Clay Plant Construction and Operation	4.00
Clays: Their Occurrence, Properties and Uses	5.00
Clayworkers' Handbook	6.50
Clay Working Problems	1.50
Directory of Dealers	.50
Engines and Boilers	1.50
Engineering for Land Drainage	2.50
Estimating Frame and Brick Houses	1.50
Finding and Stopping Waste in Modern Boiler Rooms, Vol. 2	1.00
Garages and Motor Boat Houses	2.00
Glazer's Book	1.25
Hollow Tile Silo, 100 copies	5.00
How to Build Up Furnace Efficiency	1.00
Keystone Coal Catalog	10.00
Land Drainage	2.00
Manufacture of Roofing Tile, (English Edition)	1.25
Manufacture of Roofing Tile (Worcester)	.75
Modern Brickmaking	7.00
Observations on Pottery	.60
Powdered Coal as a Fuel	4.50
Practical Farm Drainage	1.75
Producer Gas and Gas Producers	4.00
Refractories and Furnaces	5.00
Rock Excavation, Handbook of	5.00
Scientific Industrial Efficiency	2.00
Scumming and Efflorescence	.50
Silo (The Hollow Tile) 100 copies	5.00
Steam Power	2.50

Select the books that you want the most, and we'll send them to you postpaid upon receipt of price, but we can't send any books on approval. All foreign books subject to 15 per cent. import duty.

Address, Book Department,

Brick and Clay Record

407 S. Dearborn Street, Chicago, Ill.



The Martin Grate illustrated in this article is in use in many of the best clay plants, and the number of repeat orders received by the makers indicates that the claims made for this device are fulfilled.

This grate has been manufactured continuously by the same company for over 20 years, and is in successful use all over the country, under all types of boilers, large and small.

It is easily installed in any furnace without change in the brickwork, and is the only shaking-grate which can be adjusted for all of the different grades of coal, for varying loads, and drafts, without the purchase of new parts.

Those of our readers who are interested in fuel economy, durability and better boiler efficiency may address the manufacturers, The Martin Grate Co., 347 So. Dearborn Street, Chicago.

* * *

The Thew Shovel Co., Lorain, Ohio, are sending out a series of interesting cards, each one depicting by means of some unusual illustration a special feature or quality possessed by Thew shovel. A few lines of type explains this feature.

A hole punched in the cards makes it convenient to hang it up, with the result that Thew Power Shovels are continually kept before the eye.

The card on Service is particularly apropos. Other subjects are Strength, Speed, Results, Adaptability, Economy, Maintenance, Endurance, Action, Ability, Power and Range.

The company will be glad to put you on their mailing list for the cards, and also for their new Bulletin 601, telling about the Type O Gasoline Shovel.

* * *

The Armstrong Cork Co., main office at Pittsburgh, Pa., announce that the Denver office is now located at 725 Symes Bldg., while their Cleveland office is at 1204 Ulmer Bldg.

* * *

A New Industrial Locomotive

The Industrial Equipment Co. of Minster, Ohio, formerly the Cummings Machine Co., have recently placed on the market a new locomotive which is known as their Model "F." It is made in 6 and 7 ton sizes.

In addition to being a new size or capacity the manufacturers claim there are incorporated in this locomotive quite a number of special features. There has been no change, however, in the method of transmitting power from the engine to the wheels as the new model is of the friction and chain drive which method of transmission has been successfully used by them for the past five years.

This locomotive has an all steel box girder construction frame and many advantages are claimed of this construction; special high manganese chrome alloy steel is used in the axles, jack shaft and friction disc shaft and also Carnegie rolled steel wheels are used.

The well known Buda engine is incorporated and also such standard and recognized equipment as Westinghouse starting and lighting, Stromberg carburetor, Duplex governor, Splitdorf aero model magneto with enclosed impulse automatic starter, Hyatt roller bearings, New Departure ball bearings, Willard storage battery, and Diamond roller chain.

To insure maximum transmission of power and proper alignment of all working parts the engine and drive disc assembly are combined in one complete unit with a two point suspension, the recognized standard today in the automotive field.

They have eliminated innumerable number of parts by changing the method of braking. When the brake is applied, two heavy iron shoes, diametrically opposite, grip a steel brake wheel on the jack shaft. This method of braking is 100 per cent. efficient and with a pressure of approximately 25 pounds it is possible to lock the wheels.

A special feature is claimed in the stationary hand wheel method of shifting the fibre wheel across the face of the disc in order to get forward, reverse, or change in speeds.

The locomotive has a large roomy and comfortable cab in which are conveniently located all control levers. It is of a very pleasing appearance and is of a very sturdy construction.

To insure easy and quick starting and battery insurance a primer is attached to the engine manifold, manually operated from the cab. As a signal they are using the well known Fulton exhaust whistle.

The Industrial Equipment Co. have adopted the trade name of "Minster" for their locomotive since adopting the new corporate name.

They have issued a new catalog descriptive of this new model which may be obtained by addressing the company at Minster, Ohio, or the Herbert Crapster Co., Inc., their eastern and export department of One Madison Avenue, New York City.

⁂

BRICK ROADS 100 YEARS OLD

The longest records for paved roads have always been held by brick, and some of them are truly remarkable. According to a writer in The American City of New York, good brick roads over a hundred years old are common in Holland. No such record as this exists in the United States, for the simple reason that brick roads were not laid in this country a hundred years ago. There are some, however, with over a generation of service, which are still in good condition. At Carbondale, Pa., is a brick road 32 years old; Alliance, Ohio, has one 31 years old; Olean, N. Y., 25 years and Sedalia, Mo., 29 years.

The experience of Holland with brick pavements goes back to the time of Napoleon. This country also makes use of clay products in other building work. A frame house in Holland is as rare as a nice day in April and brick are used everywhere, for the houses, for the walks, as fences; it is by far the most popular building material.

The American City says: "The paving brick with which the old roads were built was made of surface river clay, sanded and close set in up-draft kilns with permanent side walls and large arches underneath for the burning of peat. The brick were brought to the vitrification point in the center and heated to a degree which made them so soft that the openings between them as set were completely filled in. The brick retained their shape by mutual support, and their separation was possible only because of the sand which was used in setting them.

"This type of brick proved to be a very good paving material and paving was done at a very low cost, not to be compared with that of American brick paved roads involving foundations, fillers, and so forth.

"Some of the brick roads are 200 years old. This type of road in Holland was begun in sandy soil districts, where traffic on the natural soil was otherwise impossible. A large number of these roads built during Napoleon's time are still in existence and in good condition."

⁂

CEMENT PRICE DECLINES IN 1921

The price of Portland Cement decreased in 1921, compared with the 1920 price. The average factory price per barrel was $1.87 in 1921 and $2.02 in 1920, according to the United States Geological Survey. In Illinois and Indiana, excepting the northeastern part of the latter state, the average price was $1.68, while in Washington, Montana and Oregon an average of $2.51 maintained. $1.73 was the average factory price per barrel in western Pennsylvania and Ohio; in New York, $1.90; in eastern Pennsylvania and New Jersey, $1.72, and in Albany, Tennessee and Georgia, $1.94. These prices do not include the cost of the containers.

ATLAS EXPLOSIVES
USED ON BIG JOBS EVERYWHERE

The blaster who uses Atlas Non-Freezing is not only SAVED the inconvenience of thawing required when ordinary explosives are used in freezing weather, but he also is IMMUNE from the headache tortures that result from handling large quantities of the ordinary forms of high explosives. Tell us what explosive you now are using and we will tell you what grade of Atlas Non-Freezing will do YOUR work.

ATLAS POWDER COMPANY
WILMINGTON, DEL.

Branch Offices:—Allentown, Pa.; Birmingham, Ala.; Boston; Chicago; Houghton, Mich.; Joplin, Mo.; Kansas City; Knoxville; McAlester, Okla.; Mexico City, Mexico; New Orleans; New York; Philadelphia; Pittsburg, Kan.; Pittsburgh, Pa.; Pottsville, Pa.; St. Louis; Wilkes-Barre.

A PROPER EXPLOSIVE FOR EVERY BLASTING REQUIREMENT

Trade Names Now in Use
on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.

ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.

ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.

ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.

ARKATEX—Southern Building Products Co., Little Rock, Ark.

ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.

ART-TEX—W. E. Loomis, Sherbrooke, P. Q.

ARTISTICO—Capital Clay Co., Des Moines, Ia.

ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.

ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.

BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.

BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.

BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.

BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.

BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.

BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.

BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.

BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.

CALEDONIAN—Fiske & Co., Inc., Boston and New York.

CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.

CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.

CLAYTEX—Walton N. Cable, New York City.

CLOISTER—Western Brick Co., Danville, Ill.

COLONIAL—Capital Clay Co., Des Moines, Ia.

CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.

CORALTONE—Harris Brick Co., Zanesville, O.

CORALROSE—Harris Brick Co., Zanesville, O.

COLUMBIA—Columbia Clay Co., Columbia, S. C.

CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.

CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.

CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.

CROWN—Green Fire Brick Co., A. P., Mexico, Mo.

DENISON—Mason City (Ia.) Brick & Tile Co.

DE LUXE—The Standard Brick Company, Crawfordsville, Ind.

DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.

DORIC—Western Brick Co., Danville, Ill.

DUNBAR—United Refractories Co., Uniontown, Pa.

EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.

E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.

ELKCO—Elk Fire Brick Co., St. Marys, Pa.

ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.

ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.

EMBOSTEX—Streator (Ill.) Brick Co.

EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo.

EMPIRE—The Minor Fire Brick Company, Empire, Ohio.

EMPIRE—Western Brick Co., Danville, Ill.

EVERHARD ANTIQUE—Everhard Co., Massillon, O.

EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.

EVERHARD DOUBLE-TEXTURE—Everhard Co., Massillon, O.

EVERHARD FERN-LEAF—Everhard Co., Massillon, Ohio.

EVERLASTING—Mason City (Ia.) Brick & Tile Co.

FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.

FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.

FISKLOCK—Fiske & Co., Inc., Boston and New York.

FRASERCLAY—Fraser Brick Co., Dallas, Texas.

F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.

F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.

F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.

FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.

FROSTBURG ROUGH TEXTURE — Savage Mountain Fire Brick Co., Frostburg, Md.

FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.

FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.

FULTONHAM-TEXTURE — Fultonham-Texture Brick Co., East Fultonham, Ohio.

GLONINGER IRON SPOTS—Gloninger & Co., Pittsburgh, Pa.

GOTHIC—Western Brick Co., Danville, Ill.

GREENDALES—Hocking Valley Pro. Co., Columbus, O.

GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.

GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.

GRID—Fiske & Co., Inc., Boston and New York.

HAWK-I-TEX—Capital Clay Co., Des Moines, Ia.

HAYES RUN—Hayes Run Fire Brick Co., Orviston, Pa.

HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston, Pa.

HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.

HI-GRADE—Southwest Building Supply Co., Springfield, Mo.

HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.

HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.

HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.

HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.

INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.

IRONCLAY—Iron Clay Brick Co., Columbus, O.

IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.

KELSO—Hayes Run Fire Brick Co., Orviston, Pa.

KEYSTONE—Elk Fire Brick Co., St. Marys, Pa.

LADLE—The Zoar Fire Clay Company, Zoar, Ohio.

LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.

LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.

L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.

LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.

LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.

M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.

MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.

METALTEX—Columbia Clay Co., Columbia, S. C.

MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.

MINOR—The Minor Fire Brick Company, Empire, Ohio.

MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.

MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.

MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.

MOBRIQUE—Harris Brick Co., Zanesville, O.

MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.

MOSAIC—Western Brick Co., Danville, Ill.

NATIONAL—The National Fire Brick Company, Strasburg, Ohio.

NO. 1—J. H. Gautier & Co., Jersey City, N. J.

NUVOGUE—Boone (Ia.) Brick, Tile & Pav. Co.

OIL—J. H. Gautier & Co., Jersey City, N. J.

OLD HOMESTEAD—Burton-Townsend Co., Zanesville, Ohio.

OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.

OLEAN BLOCK—Sterling Brick Co., Olean, N. Y

ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.

OXFORD—Southern Brick and Tile Company, Louisville, Ky.

PASTELS—The Standard Brick Co., Crawfordsville, Indiana.

PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.

PERSIAN SPLIT—Thomas Moulding Brick Co., Chicago, Ill.

POS-TEX—Poston Brick Co., Springfield, Ill.

POTOMAC-SAVAGE—Savage Mountain Fire Brick Co., Frostburg, Md.

"POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.

PROMENADE—Yingling-Martin Brick Co., Johnsonburg, Pa.

RAINBOW — Burton Townsend Co., The, Zanesville, Ohio

RED ROCK RUFFS—Auburn Shale Brick Co., Auburn, Pa.

ROTEX—Elk Fire Brick Co., St. Marys, Pa. Gettysburg, Pa.

ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.

RUBYTEX—Columbia Clay Co., Columbia, S. C.

RUFTEX—Thomas Moulding Brick Co., Chicago.

RUG—Hocking Valley Pro. Co., Columbus, O.

RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.

ST. MARYS—Elk Fire Brick Co., St. Marys, Pa.

SAVAGE MOUNTAIN—Savage Mountain Fire Brick Co., Frostburg, Md.

SHALE-TEX—Streator (Ill.) Brick Co.

SIL-O-CEL—Celite Products Co., Chicago, Ill.

S. M.—Savage Mountain Fire Brick Co., Frostburg, Md.

S. M. A.—Savage Mountain Fire Brick Co., Frostburg, Md.

S. M. EXTRA—Savage Mountain Fire Brick Co., Frostburg, Md.

SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.

SPEEDWAY BLOCK—Alliance (O.) Clay Prod. Co.

STANDARD—Green Fire Brick Co., A. P., Mexico, Mo.

STANDARD—The National Fire Brick Company, Strasburg, Ohio.

TAPESTRY—Fiske & Co., Inc., Boston and New York.

TAVERN BRICK—Metropolitan Pav. Brick Co., Canton, O.

TEXTUR—Thomas Moulding Brick Co., Chicago, Ill.

TIFFANY—Thomas Moulding Brick Co., Chicago, Ill.

TORONTO—Toronto Fire Clay Co., Toronto, O.

TOWNSEND BLOCK—The Burton-Townsend Co., Zanesville, Ohio.

TURKESTAN—Beaver Clay Mfg. Co., New Galilee, Pa.

TURKO—Rochester (Pa.) Clay Products Co.

UNITED—United Refractories Co., Uniontown, Pa.

U. R. CO.—United Refractories Co., Uniontown, Pa.

U-TEX—Fultonham-Texture Brick Co., East Fultonham, Ohio.

VERTEX—Beaver Clay Mfg. Co., New Galilee, Pa.

VITRI-CRAFT—Schuylkill Valley Vitrified Products Co., Oaks, Montgomery Co., Pa.

VOLCANIC—Beaver Clay Mfg. Co., New Galilee, Pa.

WATERPROOF—Gloninger & Co., Pittsburgh, Pa.

WIRE-CUT-LUG BRICK—Dunn Wire-Cut Lug Brick Co., Conneaut, Ohio.

YALE-TEX—Gloninger & Co., Pittsburgh, Pa.

ZOAR—The Zoar Fire Clay Company, Zoar, Ohio.

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BRICK and CLAY RECORD
Established 1892. Now in its twenty-ninth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland Kansas City
Address all communications to home office

Chicago, March 21, 1922
Vol. 60 No. 6

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep **his reading columns** independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

In View of a Coal Strike

AS THIS ISSUE of Brick and Clay Record goes to press, there still remain about ten days before the period of "mine idleness" which commencing on April 1, will in all probability be in effect. A review of the coal situation shows that there is no real cause for chaos, since the amount of fuel available will be sufficient for a period longer than the probable duration of the strike.

The average consumption of coal during the year 1921 was 7,600,000 tons per week. It can be assumed with justification that this is approximately the present fuel consumption.

There are now in storage some 47,000,000 tons of coal. The United States Geological Survey notes that stocks cannot fall much below 20,000,000 (as in 1920) without danger of a coal panic. The quantity of coal, therefore, which can be drawn from stocks on hand before a serious situation develops is about 27,000,000 tons. To this supply there will be continually added the output of non-union fields. During the strike of 1919, non-union districts furnished approximately 4,000,000 tons per week. It is estimated that due to better conditions, this output could be increased to probably 6,000,000 tons per week. Thus it is seen that in all likelihood there will be sufficient coal available.

There are some matters for consideration, however, before assuming that there is no need for worry. The freight on non-union coal, most of which comes from West Virginia, Kentucky and Alabama, will be considerably higher than most consumers are now paying, and hence this will add to the price of coal. To this must be added the psychological effect that a condition such as will exist always produces on the public's mind. Accordingly, it seems a matter of sound business policy for those who expect to operate their plants at capacity or near capacity, to have at least a small reserve supply of coal available.

Placing the Industry On a Better Foundation

DURING the past three months an excellent opportunity was afforded those who wished to study the aims of the clay products industry for the immediate future. During this interval, many state and national associations have met, including the six major associations representing various branches of the industry. The trend of the industry is best reflected from the aims cast at the meetings of such associations as the Refractories Manufacturers Association, Hollow Building Tile Association, National Terra Cotta Society, American Face Brick Association, Common Brick Manufacturers' Association, and the National Paving Brick Manufacturers' Association.

Those who attended the above association meetings could not help but notice that there were three major matters of chief interest, all of which had to do toward giving the consumer better service and promoting the use of the product.

Of primary consideration has been the study of production costs, with the idea of lowering the cost of manufacture as far as possible thru lower but proper wages; new and more modern and labor saving equipment, and in a reduction of coal costs and burning costs.

A second aim of the manufacturers is to learn more of the physical properties of the products, both individually and in service. For instance, the refractories manufacturer is extremely interested in learning the proper kind of refractory to use under certain conditions, and of determining specifications that would enable one to better select the type of refractory required. The hollow tile manufacturer is learning the various properties of hollow tile as to fire resistance, load bearing qualities, and so forth. The common brick manufacturer finds a great variance in the strength accredited to brick in the building codes of the cities of this country. To make more uniform the building codes, the manufacturers are learning more about the properties of their product.

A third very important aim of the industry is the improvement of quality. The elimination of scum, standardization of sizes, increased refractoriness and better burned ware are aims of the different branches of the industry with respect to their product.

When these three ideals are attained in a greater degree of completion—the lowering of production costs, the more complete knowledge of physical properties, and the improvement in quality—the products of the industry will be in greater favor and this will mean the more healthful condition of the industry. Every manufacturer should enlist in this work, by striving to do his best to attain these ideals and by giving to others the benefit of his experience. The increased use of clay products will then take care of itself.

A Convention's Success Depends on You

WHY do you attend conventions? Do you go because it has become a habit, because it is customary for associations to hold conventions? Or do you go with a view to actually getting something out of them? Or, worse yet, maybe you don't go at all.

There is only one way to get anything out of a convention and that is to bring with you your ideas and problems.

If you should go to your neighbor and exchange dollar bills with him, you will both have a dollar and neither will be any richer or poorer because of the transaction. But if you exchange ideas with him you have made a profitable deal, for you not only still have your own idea but have gained another in addition.

At the American Ceramic Society meeting in St. Louis recently, the Heavy Clay Products Division held its second meeting. It was one of the most inspiring meetings of heavy clay products men which has ever gathered anywhere. To call it a convention would be a misnomer; it was more in the nature of a forum where men brought their ideas and sought relief for their manufacturing troubles. Everyone joined in the discussions which followed the reading of extremely interesting papers and there were more constructive thoughts brought out in two hours of discussions than in three days of speeches at many conventions which we have attended.

This the Heavy Clay Products Division of the American Ceramic Society accomplishes because men attend the meetings with a view to getting out of them the utmost that they can. They realize that to get anything out of the sessions they must contribute something themselves. Truly, in no case can you "cast thy bread upon the waters" with a greater assurance of having it return to you a hundredfold.

Construction in 1922—A Banker's View

Says Revival of Construction Means Great Deal to Revival in Other Business—2½ Years' Shortage in City Buildings—Problems of Financing Largely Ended

By Col. Leonard B. Ayres

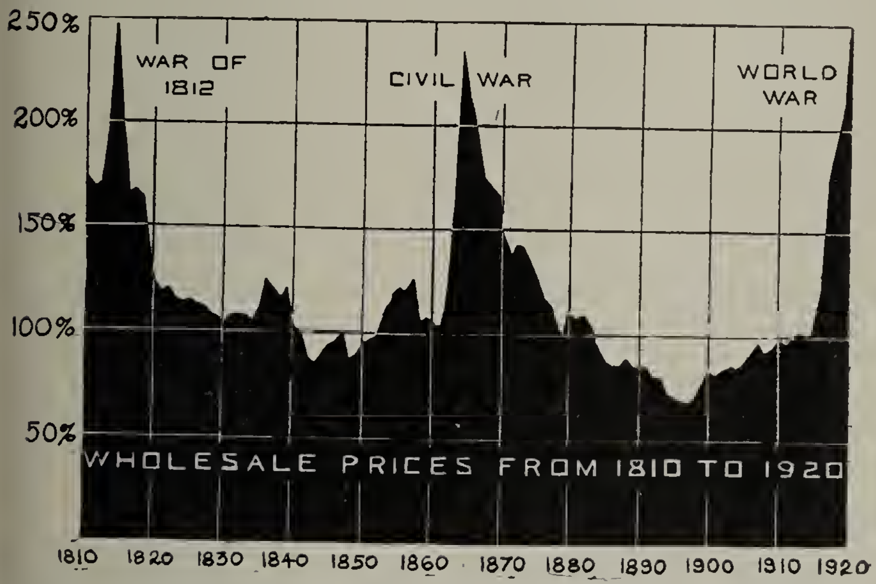
Vice-president of the Cleveland Trust Co.

YOUR PRESIDENT asked me to talk on "The Construction Industry in 1922 From the Viewpoint of a Banker." Now, when the banker looks at any business proposition, he thinks of it, if he is wise, in terms of general business conditions. General business conditions are, in the last analysis, prices—prices of things and prices of services, prices of money and the relationship between those prices, so that if we have an understanding of what is happening in the prices that constitute general business and particularly the specific business about which we are talking, we shall have a greater understanding of the problem that is before us.

In the hope that I would simplify somewhat a brief presentation of how this thing looks to us, I brought along some charts which relate in the main to prices, and I'd like to show them to you. I don't know how simple I can make it all, because it is not so inherently simple.

Chart No. 1 shows what has happened to wholesale prices in this country for 110 years. Let's think of a group of fundamental commodities, wheat and iron and copper and cotton and wool and things of that sort, that you could have bought in 1914 for $100. What did that same group of things cost during the different years of our country's economic history?

Note the 100 line on the chart. Every division across the chart is ten years. It starts at 1810, it runs across to 1920, and just before the war, in 1914, you will see that the horizontal line, 100, and the silhouette come together and that means that this collection of commodities cost at that time $100.



Graphic Evidence Based on Historical Records That Prices Will Be Lowered.

If, then, we go into the old records and trace those prices back, we find that just before our entry into the War of 1812, in 1810, those same things would have cost about $160. We often think of things as having always been cheap in the olden days but that is very far from true. It was true of wages and of some food products, but manufactured things in the main were exceedingly costly.

Then we entered into what was in reality a great world war, just as this past conflict was a world war. Our War of 1812 was our participation in the Napoleonic wars of that period, and prices shot up to almost 250. The end of the war came and, just as they did last year, prices collapsed and they kept going down to the low point, which is 1816, and there you see they stopped.

Prices Were High In 1816

That was a remarkable year in American history. We had no summer. There was snow and ice in every month of the year. The crops were a complete failure and people were compelled to eat their seed corn and kill their farm animals. Prices stopped falling. But the next year there was a harvest and down they went again.

That takes us to 1820, down irregularly to 1830. Then for a few more years, and then the people get tired of this long period of declining prices. We may imagine what it would be like if we had the sort of time for 20 or 30 years that we have had this past year, and they elected Andrew Jackson on a platform pledging him to do something about it. Well, he did something about it—he broke the Bank of the United States, inflated the currency and brought back prosperity, for a time, and prices went up.

Then there was another collapse and we went into a very great calamitous crisis of 1837, and on down into the '40's and there the prices turned to go up again, where we entered the Mexican War. Prices always rise in wartime. But that was only temporary—down again, up again, the panic of 1857 that started in Ohio and spread all over the world, one country after another, another collapse and it brings us up to 1860 and then we entered the Civil War and once more the prices of those commodities went up almost to their old level.

Prices Collapsed After Civil War

The war came to an end, they collapsed again. Down they came on down to '72 where we resumed gold payments; another panic, a long depression from '73 to '79, a recovery, another crisis in 1884, down again, down, down irregularly to 1896 and '97 when those things which had cost some 60 or 70 years before 160, those same things that cost just before this war 100, cost in those years about 66, the lowest level of prices that we have seen in this country in more than a century of economic development.

Then they turned, went on up. A little bump on the diagram shows the Spanish-American War; on up to 1914, and then shot up once more as we entered the great war to the old level of 250 or thereabouts.

As I look at that chart, the thing that impresses me is that this isn't the first time that this has happened to us. Three times in our history we have gone thru this same experience. Then I note that we have here a great economic cycle. Roughly and irregularly, 30 years of falling prices and 20 years of rising prices and 30 years of falling prices and 20 years of rising prices, and if there were one question which you and I could answer now about our business, the most important question of all would be, I think, "Where do we go from here?"

Editor's Note—An address before the annual convention of the Associated General Contractors in Cleveland, January 19, 1922.

Business Is Uncertain of Future

If we knew where we were going from here, whether once more we were going to enter into a long, irregular period of falling prices, then we should have the answer to the most important question that there is, for the construction industry as for every other industry. For the conduct of business in a long period of falling prices is as different from the conduct of business in a period of rising prices as night is from day.

Suppose that you were a farmer and you raised wheat, and wheat is worth $2 a bushel. You have a mortgage on your farm of such a sort that you must pay $200 per annum on that mortgage. What you've got to do is to run your farm in such a way that it will support yourself, your family, your animals, your buildings, and, in addition, you must get out of it 100 bushels of wheat at $2 per bushel.

Now we enter one of these long periods of falling prices. Bye and bye you get down to the place where wheat is $1 a bushel. What you must do now by extra effort, by better management, is so to run your farm that it will support you and your family and your animals and buildings and get out of it in addition 200 bushels of wheat, from that same farm, to pay your mortgage installment.

Falling Prices Bring Hardships

It's just the same principle in any other business. In a long period of falling prices the rent is harder to pay, the taxes are more difficult to meet, the interest on any specific debt that requires a given payment each year requires more effort, more output to defray. Business in a long period of falling prices is very different from that in a period of rising prices.

Suppose that you are a manufacturer. In a period of rising prices such as we have been thru in recent years, you buy your raw material, you make it up into your finished product and while you are making it, the very material of which it is constructed has increased in value and your finished article can be sold not merely for the profit that you thought it would bring but for that and something more.

If there were time, I could give many illustrations, as all of you men could, of profits made that way in the past few years. But in a period of falling markets, the manufacturer buys his raw material, makes it into his finished product and by the time he's got it made up the very material from which it is constructed has shrunk in value and he makes not the profit that he had thought he would, but something less.

It is true of almost every one of us that we have had our active business lives in that 20 or 25 year period of rising prices, just as it is true of the fathers of almost every one of us here that they had their active business careers in that long 30 year period of declining prices.

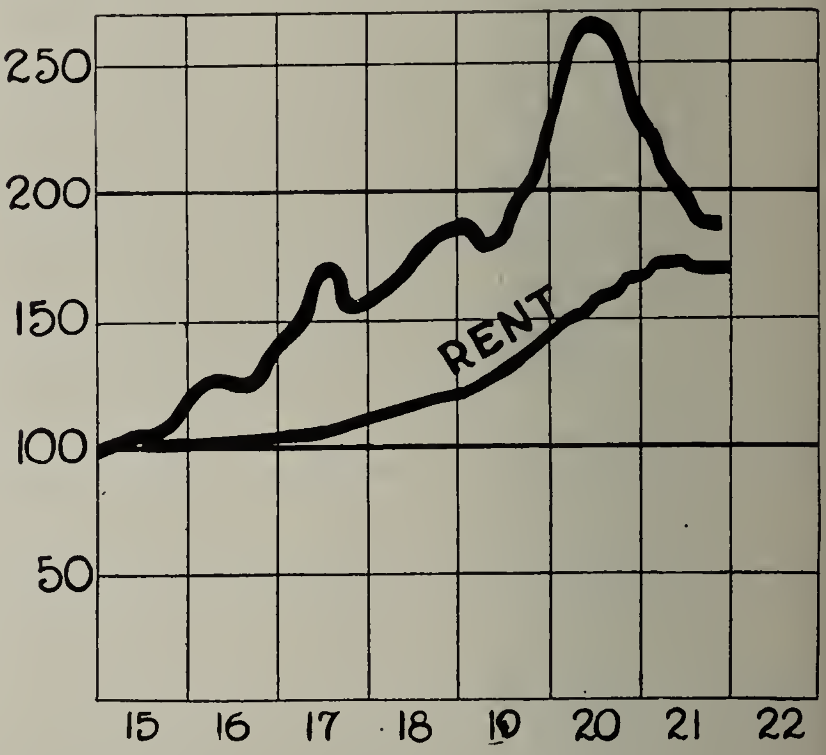
Business Methods Vastly Different

Men often wonder and deplore the fact that when business conditions are under discussion there is so little sympathy between old men and young men, between us and our fathers. How can there be sympathy? They were brought up in a different business world from that which we have always known. And so I say, could we but know what the future holds for us in this one respect, we should have the most important single piece of business information that there is. I don't know where we are going, what is going to happen. No man is a prophet.

It seems to me, without going into a discussion of the economic theory behind it, that there is evidence which should make us believe that in all probability we have entered upon a period of irregularly declining general price levels for at least the span of ten years from the time that those prices turn. Not that they will in any event go down without some upward changes, for all of these movements in either direction are irregular, but I believe that there is reason to think that in general our price trend during that period will be down, and if that be true then it behooves you and me to stop and think what it was that our fathers used to say to us when we discussed the problem of business, for they were talking from a long experience in the other kind of a business world.

Father's Advice Not Always Good

I remember what my father used to say to me, and it didn't seem to me very sensible. He talked about the great danger of having a mortgage on your place. In recent years many of us haven't been able to afford not to have a mortgage because we could do more with that money than we could save by not having it. He used to talk about the very great necessity for careful thrift, for watching each cent; about the necessity for knowing how a business move was going to come out before you undertook the commitment that was involved; about the necessity for establishing a careful credit with your banker before you entered a new enterprise; about the necessity for careful and thoughtful management; about needing to know all of the facts involved.



Fluctuations in Construction Costs from 1915 to 1922.

That hasn't been true of business in the last quarter of a century to any such degree. The man who was sanguine, who was hopeful, whose philosophy of business was one of unbounded optimism, was, as he would say, a "bull on the United States," a man who took a chance, a trader, in some sense the speculator, that is the man that we have seen build up the great fortunes in the last quarter of a century, but I think, gentlemen, that that thing has changed and that in the few years to come other methods and other attitudes are going to be the key to success in this era of increasing competition.

American Success Semi-Automatic

During the past quarter of a century much of American success, like much of American machinery, has been semi-automatic in character. We haven't realized it, we have thought it was because we were an abler race of men than those inhabiting other nations. We have not given due weight, I think, to the fundamental economic causes that were pushing prosperity upon us. If we have not, we shall.

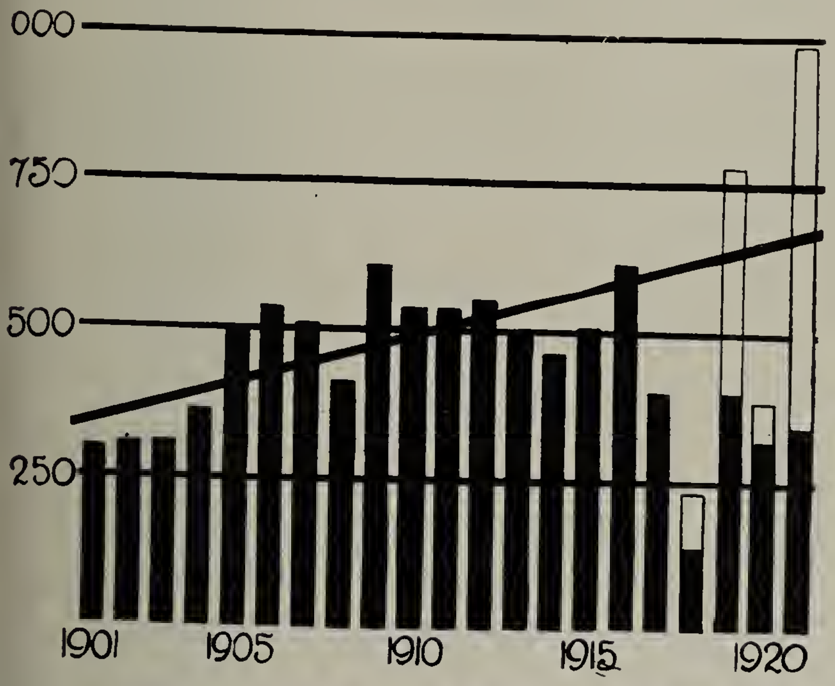
While these things have been happening in these recent years to general costs, what has happened to the cost of construction? As best I could, I have had made up a chart showing in the upper line the course of general building construction during the past eight years. It is not an ideal index, it is made from a weighted measurement of the shifting prices of the 15 most important building commodities and of a weighted measurement of the shifts in the cost of building labor over this period of time. There could be a better index of building costs and there ought to be, and I think it is your association that ought to take the steps to bring it into being. I think that a really good, a thoroly reliable index of building costs that you could run from month to month over a period of years would do more to help your profession, and, I may say, to advertise your association, than any other thing that you could bring into being, because every month that index number would be quoted in every financial review in America and every leading paper would have to tell whether it had changed upward or downward during the past month, just as they now have to tell what has happened to the cost of living. That could be done; if you gentlemen should get together cooperatively you could do it rather simply. I shan't take time now to go into a discussion of how it could be done, but if anybody is interested later, I have an idea on that subject, two or three of them, that I would like to talk about.

Construction Cost Rise Started in 1914

Taking these figures, we note that the amount of construction which cost 100—you may think of that as $10,000, if you please—in 1914 and the beginning of '15, rose during '16 to 150; in '17, a quick lift when we entered the war and were doing governmental construction on a large scale, on up during '18, a fall after the armistice and then the great post-war boom in '20, up to almost 270; turning in the summer of that year and going down uninterruptedly during this past summer and now coming off over the last two or three months on a comparative level, at about the 180 mark.

That is very important when we start to consider this construction industry from the banker's point of view, for all of us have learned in recent years that business does not go ahead on an even keel without changing, but rather that it goes ahead in a wave-like motion of changes from prosperity to a quick decline, to a protracted depression, to a gradual recovery; back to prosperity, and there the cycle begins once more and that cycle is largely controlled by these prices.

In the period of depression all men search for some sign that better times are coming, and almost the first thing that comes is a recovery in construction in industry. And when it comes it does more good than almost any other kind of a recovery. If we start up in Cleveland at this time a factory that has been closed, that is good, that helps disseminate prosperity, but the recovery of construction is better, and for this reason:



Construction Activity in Millions of Dollars in 20 Cities During the Past 21 Years.

Prosperity Follows in Wake of Building

It does not disseminate prosperity in any localized or restricted area. Suppose that you are going to build in this general locality a new structure. Men come first and do the excavation. They come from various parts of the city and when they go away, another set of men comes and puts in the foundation, and in the main they leave. Still another set comes and another and another until we have the building going on to its final stages and bye and bye we begin to put in the interior decorating and carpets and furniture and perhaps linen or desks and maybe silverware, and each one of those demands goes out to a new class of the community and it diffuses, it disseminates this recovery of prosperity all thru the community.

And so the recovery of the construction industry is the first, the most potent and perhaps the most important sign of a recovery from a period of depression.

That has begun to take place now, and we watch it with the very closest scrutiny because we are enormously interested in that thing, more than we would be in the same amount of recovery in any other industry.

Construction in the Last 20 Years

I tried to find out how much of that was going on. I had some of my people hunt up what had happened in construction in 20 cities of this country during the past 21 years, and each one of those black upright columns represents in millions of dollars the amount of building permits in the 20 leading American cities each year over the past 21 years. They are rather low in the period of hard times, the panic of '03-'04. They come up sharply in the period of prosperity that followed. They fell off again in the period of '07-'08; responded again in the prosperity of '09 and the steady prosperity of '10, '11, '12, going down again in the hard times of '13 and '14; then recovers.

On the right side of the chart are four lines partly solid, partly in outline. A very little one indeed for '18; an enormous recovery in '19, a bad period in '20, and a very great amount of money spent on construction in '21. These last columns partly solid and partly in outline represent in their entire height the total amount of money spent, but that building was very expensive building and the money spent did not measure the amount of building actually done in the same sense it did last year, so I divided thru by the increased cost of that construction each year and it shrinks these columns down to the part that is in black, and that shows on the same basis that we have in the other black lines, how much construction was actually done.

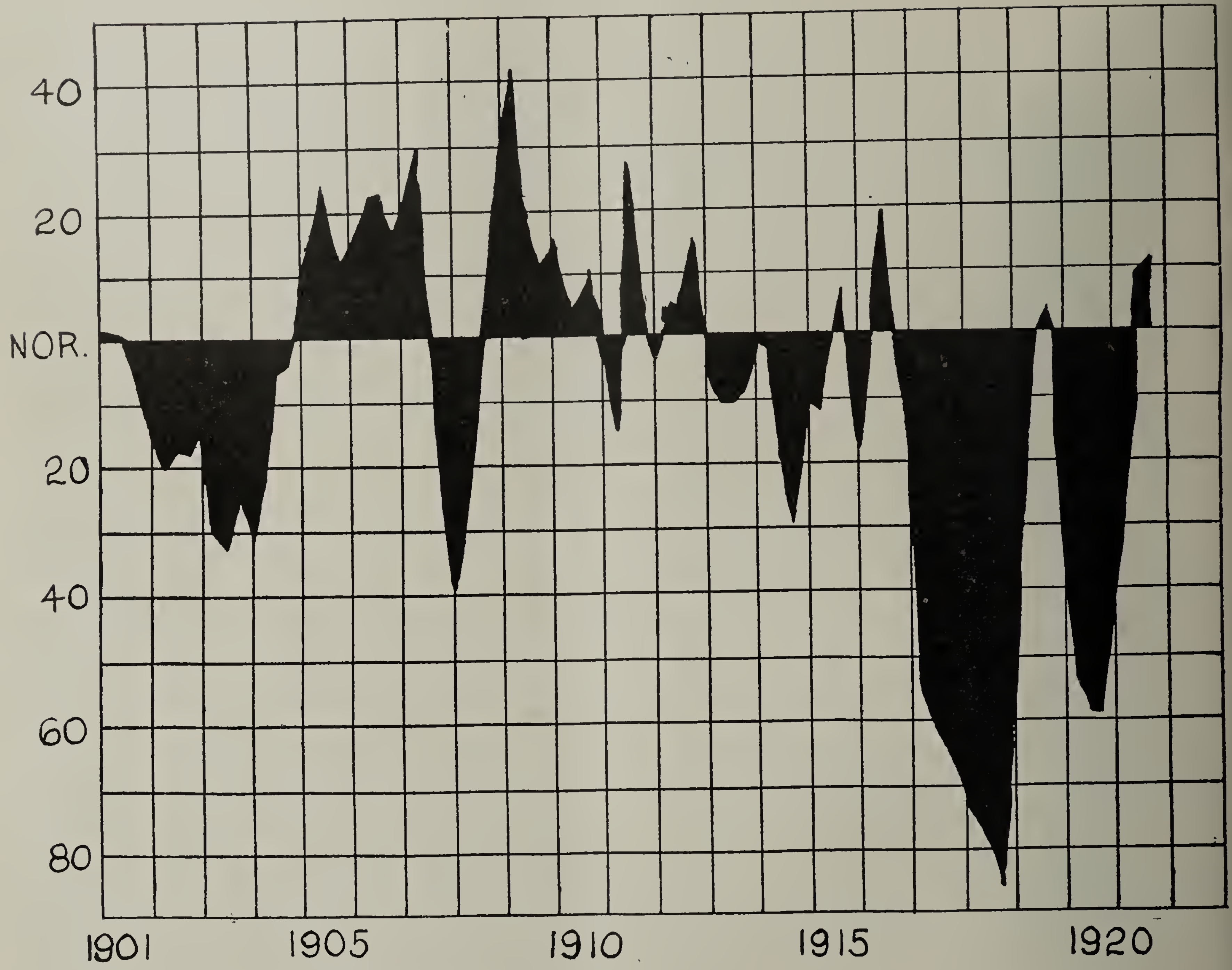
The General Trend of Construction

Then I said, "Now let's find out how this business of construction in our cities is growing from year to year." So I had drawn thru this diagram from 1901 over to 1915 the slanting line. That represents the general trend of construction that was increasing as these cities grew in population. It is not drawn thru by guess work or by pulling a string across the upright columns or by any such method, but by the method of least square, which gives us a line that a mathematician would describe as representing more accurately than could any other line that might be drawn the general trend of these irregularly rising columns, and I continued it on up over the last abnormal period and now we can say that that is the normal line.

We may say that in the bad years building was below normal. Then it shot up very much above normal and made up this deficiency. In hard times it fell below normal and then it shot up and stayed up considerably above. It went down and was coming up when the war came on; then we have the irregular process further on. Building responds very sensitively to these changes in business conditions. It is very depressed or it is very active.

During this past week we have been having examinations in our public schools. One of the boys took the examinations, one in grammar and the other in geography. The second day in geography the question was asked, Name the Zones.

The boy said, "There are two zones, masculine and feminine.



Story of Construction Industry in 20 Representative Cities. The Line at "Nor" Denotes Normal.

The masculine is either temperate or intemperate; the feminine is either frigid or torrid."

Building Seldom Takes Middle Course

Now, that is like the construction industry. It is either frigid or torrid, and here you have it swinging from one stage into the other, and so if we have our normal line as we have there, we may measure the degree of the torridity and the frigidity and find out how much shortage or how much ahead of the natural, normal requirements in the communities the thing is.

I took this slanting line and I made it into a horizontal black line right across the sheet and I put below the deficiency by quarters instead of by whole years, and above the surplus above normal. 20 below the line means 20 per cent. below normal, and 30 below the line means 30 per cent. below normal and so on. 20 above the line means 20 per cent .above normal and the horizontal line marked "nor" is simply the slanting line on the other chart that I have turned around until it is level.

So here we have the story of the construction industry in these 20 leading American cities, a deficiency of building in 1901 and '02 and '03 and '04, a very quick recovery catching up with the deficiency and going ahead here and activities above normal in '05 and '06 and the first part of '07, the panic of '07-'08, almost a stoppage of construction; a quick recovery and back to the prosperity of 1909. Then several years, you remember them well, when we didn't have very prosperous times and we didn't have any more panics or depressions, and construction like other business went along fluctuating above and below normal over quite a span of time.

Building Slumps During War

Then we came into the period of restricted building that came with the Great War, and the government came into it and down, down it went until we get down to '18, almost to a suspension of city building where at the low point we were about 96 per cent. or 98 per cent. below normal, down almost to nothing. A brief recovery in 1919, and a very great depression again in '20 and the rapid recovery which has carried us up to that point on the basis of the last data that has come in.

So we have there a mirror how this thing has been fluctuating over a quarter of a century.

So I took those figures and said, how far ahead or behind the game are we? Because that is the answer that I was trying to get at—to see how the size-up of this industry would turn out. And here I have charted a line showing the accumulated results of the previous chart.

If you put all these deficiencies along and then add the surpluses and subtract deficiencies again, what happens? We were even with the game when we started. We ran into those hard times of 1901 to 1904 and accumulated a deficiency of buildings in 20 cities amounting to more than one-half year's construction.

Shortage Cut Down During Prosperity

Prosperity came and we cut down that shortage and we got it down almost to normal when the panic of '07-'08 came along, restricted the building and the shortage came up again. In 1909 the construction went ahead rapidly, the shortage was cut down until we got to normal and ahead of it, and again to get a little overbuilt, and many of you can remember those years in which our city buildings generally were overbuilt and many of you can remember those years in which our city buildings were hunting for tenants. It ran along there up to '14 and '15 and '16, a little shortage developed and then '17, '18, '19 and '20 one year, two years, 2¼, well along toward 2½ years of shortage of building in our American cities, and I think that will turn out to be about that figure, whether you measure it by these 20 cities or whether you take 120 cities.

It is not true for the country districts insofar as I can find out, but in city buildings that in general is the condition, and we have turned the corner and started to cut it down with the active building operations the last few months.

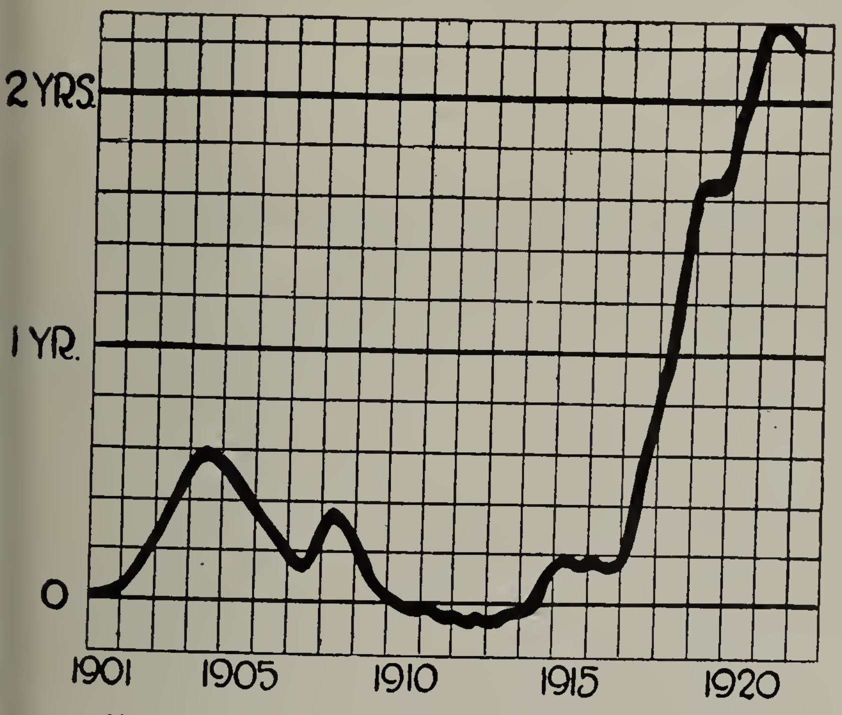
Gentlemen, let's assume that that series of computations is roughly right, and I think we may do that. What does it mean? It means that this industry, if it has ahead of it a shortage amounting to 2¼ years of construction is in a condition where, if we have anything resembling normal business, it can go ahead for nine years at 25 per cent. above normal for the whole time.

Construction Industry in Unique Position

It isn't going to do that, for various other reasons, but that shortage is there. Most of it is a shortage that has to be made up—not all, because in some measure if you use a building longer than you normally would use it, that doesn't have to be made up. The suit of clothes that I have on has done a year's more service than normal and I will never have to make it up, I have saved that year. But that is not equally true of the buildings for your populations grow and they require more and more buildings and this normal is a very real thing. If we grow with that rapidity, it happens to our clothes, too, by the way.

No other industry has any such condition confronting it. That constitutes an opportunity that ought, if properly managed, to turn out to be one very nearly unparalleled in our current economic situation.

Why does business recover after a depression? These business cycles that I have talked about—several things always happen in order. When we are at the height of prosperity, running along with great profits and enormous activity, the first warning we get that that thing is coming to an end is a break in the stock market. It always happens. About six months after that break, we get a break in commodity prices. About six months after that we get one in interest rates.



How Far Ahead or Behind the Game Are We?

Depression Periods All Act Alike

If you take the last five serious depressions in this country and go thru their history, you find those three things happening in that order at almost identically that time spacing. All of them have happened this time. They have happened in that order, and the interest rates are now well down and still dropping. When they drop far enough, business men begin to see that once more they can resume business at a profit and those who are enterprising and daring have in the past in that last stage of the depression started to extend their factories or to build new ones and that is what has brought about the recurrence of construction activity in the latter part of a depression, and that is why economic students, bankers and financial writers always watch for that up-turn in building because they know that what it means is that money has at last become cheap enough so that progressive and enterprising business men are once more starting to build. It becomes a barometer of business.

This time the recovery of building is not of that sort. It is not typical, and watching it as we do with greatest care, we mustn't let ourselves be deceived into thinking that it is that sort of enterprising business and industrial construction that has characterized the recovery from every previous depression in this country. It isn't; it's something different.

Neglected Everything But Industrial Building

During these past half dozen years of abnormal activity and great prosperity in this country, we have as a nation given our effort and our attention to that type of construction that related to producing things, manufacturing things and storing, and we have neglected those things that relate to the comfort and the welfare of people, and our great shortage has grown up in that latter kind of building. And now when we return to construction activity, we find that activity is sluggish in those things that relate to the manufacture and storage of things and that it is active and stimulated in that kind of building that has to do with the comfort, the shelter and the welfare of people.

And so we can take what happened in 1920 from the Dodge figures, what happened to 1921, and we shall find that standing out and we shall find, taking the money out of it, by talking about square feet this time, a situation like that shown in the chart.

The black lines represent 1921 while the open white one represents 1920.

Residence Building Increased 50 Per Cent.

The residence building in 1921 in millions of square feet is 183 as against only 132 in 1920, an increase there of almost 50 per cent. Business buildings have shrunk. School building is active and getting more active. The proportion is rising and there is an enormous shortage of school buildings, which in 1920 amounted to 124 million, is down to roughly one-quarter of that amount in 1921. That shortage, that sluggishness, still continues and will for some time to come in most parts of the country.

Amusements, which largely means movie theaters—33 per cent. ahead of 1920. Hospitals well along toward double. Churches, well along toward double. Public buildings, the same.

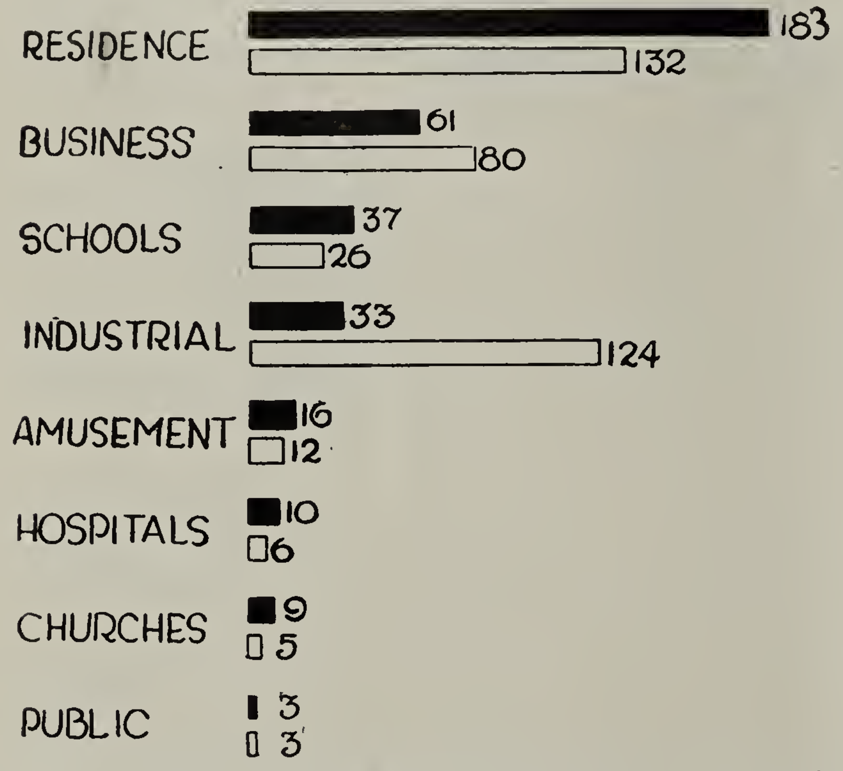
So we have these buildings that have to do with business and industry, sluggish; but residences, schools, theaters, recreation halls, hospitals, churches, public buildings, catching up with this deficiency that is behind us and of course business recovers as it has already started to do, gradually, and I think it will be a long and slow and irregular recovery.

So I should say in concluding, that the outlook for the construction industry is one of a most extraordinary sort and an outlook that has an exceptional promise for good business on a falling market. When I say on a falling market, I mean a market of general business.

Shortage of Building Augurs Well for Future

An industry which enters a period of great accumulated shortage at a time when interest rates have fallen far, far below what they were and the difficulties and problems of financing are rapidly disappearing—so rapidly that my own expectation is that within six months most of the acrimonious discussions that you and we have indulged in will be at an end—for I think the problems of financing are largely ended because money is easy and seeking investment, prices have come down to a relative stability, a shortage exists.

Those are the three factors which are necessary and present for increased activity in the building industry. We are entering this era at a time when your industry, like every other industry, is going to find that its problem is one of more efficient management and of delivering to the buyer a large value for the dollar that he has given.



Building in 1921 and 1920 Denoted by the Black and White Lines Respectively.

Value Will Be Key Note of Business Dealings

For business men in this period of competition are going to demand value, they are going to shop when they make their purchases in construction just as they are in every other commodity. That man who can hand over to them a large inherent worth for the investment, is the man who is going to reap his reward in this competitive period that is upon us—a period, I think, in which that man is going to succeed and those firms are going to survive that practice this sort of foresight that we have been talking about, that are able to exercise a wise thrift, that can increase the efficiency of the management of their concern and most of all that know or get to know the fundamental facts about their business, who have the ability and the will to substitute facts for guesses and knowledge for opinions, and evidence for speculation.

For that man in the construction industry, a very hopeful future exists. And gentlemen, that is what I think about the construction industry in 1922 from a banker's viewpoint.

* * *

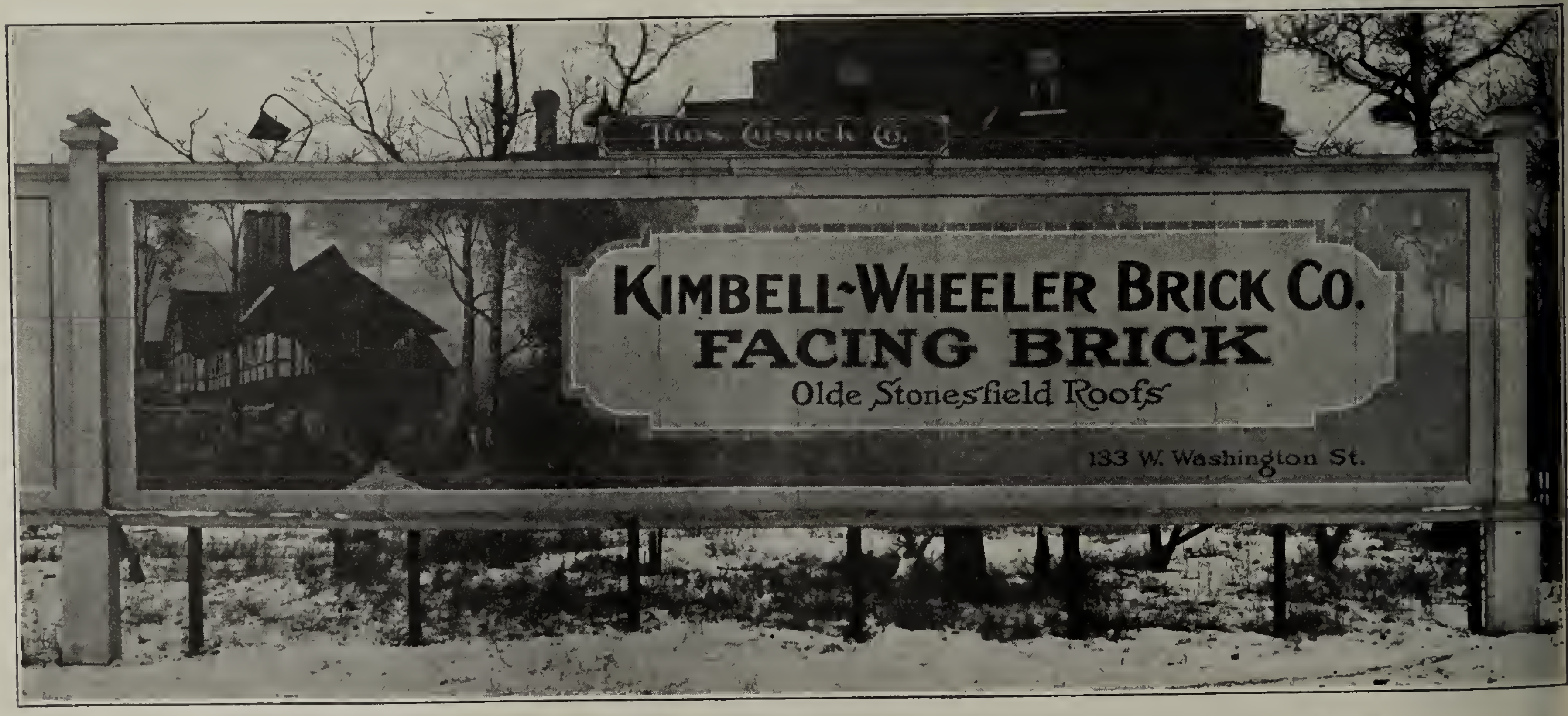
PICK CHICAGO FOR CONSTRUCTION INDUSTRIES MEETING

As has been previously announced, the 1922 meeting of the National Federation of Construction Industries will be held at the Drake Hotel, Chicago, Ill., on April 3, 4 and 5. The convention will be held in conjunction with the Fourth American Lumber Congress and meetings of other construction organizations. A feature of the meeting will be demonstrations by displays of associations or individual firms showing progress made thruout the country in design, research, simplification and standardization of products, and other developments tending toward a better distribution and utilization of materials, lower production costs, a more continuous operation of producers' plants, mills and quarries, lower construction costs, successful apprenticeship systems, economies thru proper safety insurance and other developments which have tended to eliminate the wastes of the combined industry. Over 25 associations and individual firms have advised that they will prepare interesting displays.

* * *

BRICK PUBLICITY ON BILLBOARDS

Why do most of us chew Wrigley's gum, wash with American Family Soap Co. products, smoke Camel cigarettes and wear Boston garters? Because these products are so widely advertised that everywhere you go, in every paper you read, you see an advertisement which keeps them in your mind. You cannot even get away from these advertisements when you are driving the streets in your automobile, for there are still the sign boards, which tell you to use American Family soap, and so forth. This billboard advertising has grown immensely in popularity, but brick men have been slow to appreciate its value. There are, however, some companies who are using billboards. One of these is the Kimbell-Wheeler Brick Co., Chicago dealers,



An Extremely Attractive and Artistic Sign Advertising Face Brick. It Faces Chicago's Famous Sheridan Drive.

who have had painted a beautiful and artistic sign, which is shown here. This sign faces Sheridan Road, one of Chicago's most popular boulevards, and thousands of people pass it every day. The Kimbell-Wheeler Brick Co. is a firm believer in advertising in general, and also believe that a sign of this kind is extremely good publicity. This company has recently enlarged its territory, and now includes, besides the Chicago district, the entire northern part of Illinois.

* * *

VALUABLE BOOK ON COAL

A book by F. R. Wadleigh, entitled "Coal Manual," has recently been published by the National Coal Mining News of Cincinnati, Ohio. The book contains very valuable information for salesmen, buyers and users of coal, and is a very clear and concise presentation of the subject. It deals very thoroly with the elementary information desired by a large number of men interested in coal other than the actual mining operations.

The book contains such information as origin and uses of coal and classification of the various kinds and grades; production in the various fields of the world; general handling, preparation, screening, washing, and so forth; analysis; information in regard to firing various types; classification of coke; firing boiler furnaces; spontaneous combustion in storage, and a brief bibliography on the subject of coal.

* * *

Convincing the Farmer That Tiling Always Pays

BEFORE VERY LONG the frost will be out of the ground and farmers will again turn their thoughts to the working of their fields. With the advent of Spring the drain tile season also is at hand and the manufacturer of drain tile is turning his thoughts to the possible market he has for drain tile among the farms in his vicinity.

To educate the farmer that it pays to drain his land has been a slow and long drawn out process but most farmers have at last been convinced that a tiled farm has many advantages over an undrained one, or if they have not been absolutely sold on the question they are at least open to argument and are willing to consider tiling if they have the money to pay for it. More educative work is necessary, however, for what most farmers do not know is that it pays big dividends to tile their farms whether they have the money to pay for it or not! Any banker with even a little business sense can be persuaded to loan money on such an enterprise because the returns on money invested for this purpose are so great.

Capillary Moisture Gives Plants Food

No matter in what section of the country a farmer may be it will pay him to install a system of tile drainage. This fact has been brought out in many scientific investigations conducted on this subject by eminent agriculturists in this country. These investigations have disclosed the fact that in some sections plants are actually starving from lack of moisture in a soil that is saturated. The reason for this is that plants derive their food only from substances dissolved in the capillary moisture. This means that the percentage of moisture in the soil must be reduced sufficiently to permit capillary action to bring food to the plants. Naturally, where the excess moisture is removed by evaporation it is a slow process and retards the growth of crops. Drain tile in the soil do not only speed up this process but, if properly installed, will condition the soil and actually increase the amount of "food moisture" available for the plants.

It has been determined by agriculturists that farm crops should have a food zone of about four feet. The best depth at which to lay tile is therefore four feet. This is of vital importance. There have been instances where tile drainage systems have been installed on farms and laid at a depth of 2½ feet, proving almost a total failure judging by the results in increased crops. Naturally such a failure of drain tile makes the farmers in that section exceedingly skeptical regarding the value of drainage systems.

In most drainage systems the spacing of the laterals is 100 feet, because the results from this system have always proved very great. These very great returns have probably been one of the retarding factors in more intensive drainage development because the farmer, in view of the great success experienced with 100 foot laterals, has been loath to invest more money for additional tile. One thing is certain, if the farmer secured a 100 per cent. return with a drainage system having 100 foot laterals he will not secure the same proportion of dividends from a system with laterals spaced 50 feet.

Drain Tile Will Improve Any Soil

In certain parts of the country, notably in Iowa, where soils have been wet and not very productive, drain tile have increased the value as well as the productiveness of the land 100 per cent. These astonishing returns will not of course be realized in every part of the country, particularly not in those sections where soil conditions are naturally excellent, but in every case the increased crops added to the increased land value will pay for the investment in an astonishingly short time, two or three years being not at all unusual. In Germany intensive agriculture is practiced to an extent never dreamed of in this country and the success of farming operations there is in large measure due to the appreciation of the value of farm drainage.

One of the most important markets for drain tile in future years will be the drainage of sub-soils in highways. Highway engineers are coming to realize more and more the importance of the foundations of the road and are recognizing the necessity for adequate drainage to supersede the old inefficient method of side ditches to take care of the water. More failures in highways have been occasioned by the gradual washing away of the foundation, due to inadequate drainage, than to any failures of surfacing material. Altho it is impossible to arrive at any accurate figure, it is safe to say that in the next few years thousands of miles of roads will be tiled.

Another field which offers great possibilities for the drain tile manufacturer is the reclamation and development of vast areas of swamp and marsh land which is now going on in various parts of the country. After the water is drained from these fields they rarely are in condition to be used for anything but pasture and hay lands. Not until the drain tile is placed in the ground does the soil become useful for growing purposes. Large tracts comprising thousands of acres have been reclaimed in this manner in Minnesota. One of the largest enterprises along these lines is the reclamation of the Everglades in Florida. Millions of drain tile will ultimately be used to make these swamps productive.

Business Briefs and Trend

FEBRUARY BUILDING GAINS 73 PER CENT.

February construction activity was 73 per cent. greater in volume than it was in the corresponding month of last year, according to the F. W. Dodge Co. The total amount of contracts awarded last month in the 27 northeastern states of the country amounted to $177,365,000, an increase of seven per cent. over January, and the second largest February total on the Dodge company's record.

A significant feature of the February construction record is the increase in business buildings over January. The increase in square feet of space contracted for was 30 per cent., and the increase in total was 65 per cent. February business buildings amounted to $39,180,000, or 22 per cent. of the month's total, an unusually high percentage for this class, which was exceeded only by residential building, amounting to $75,703,000, or 43 per cent. of the total. Public works and utilities took third place, amounting to $21,193,000, or 12 per cent. of the total.

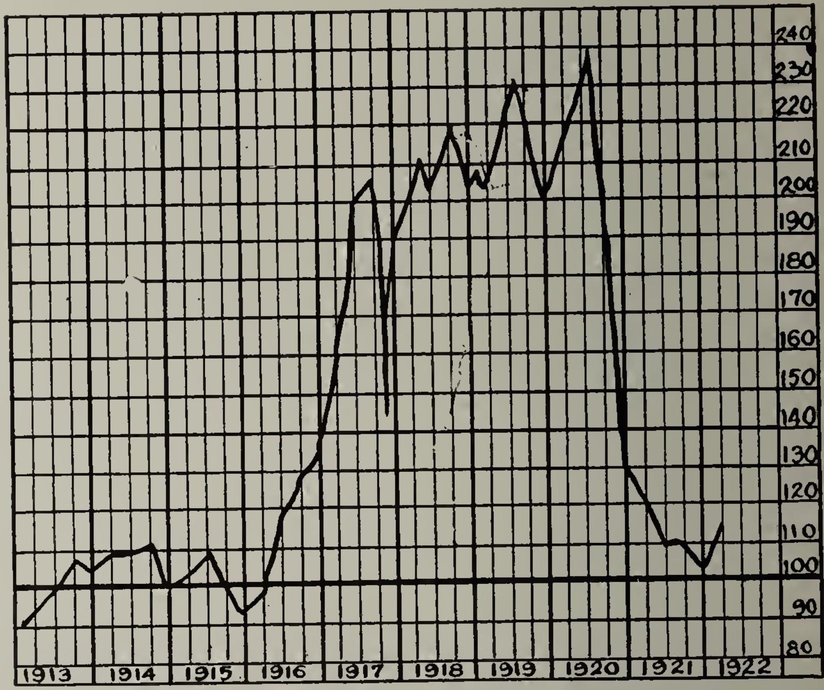
The accumulated volume of construction since the first of the year has been 60 per cent. greater than in the first two months of last year. Contemplated new work reported in the first two months has amounted to over $800,000,000 more than double the amount of work placed under contract in the same period.

* * *

EIGHT WEEKS' COAL SUPPLY IN CASE OF STRIKE

The consumption of bituminous coal in 1921 averaged 32,000,000 tons per month, or about 7,600,000 net tons per week, according to the U. S. Geological Survey. Stored bituminous coal on January 1, 1922, totaled 47,000,000 tons. The Geological Survey further notes that stocks cannot fall much below 20,000,000 tons (as in 1920) without danger of a coal panic. The quantity of coal, therefore, which can be drawn from stocks on hand before a serious situation develops is about 27,000,000 tons. Therefore, in the event of a strike, there will be a coal supply sufficient for a little less than four weeks. To this supply there will be continually added the output of non-union fields. During the strike of 1919, non-union districts furnished approximately 4,000,000 tons per week. Assuming that the average consumption in 1921 maintains at the present time, the supply from non-union fields would fall short 3,600,000 tons per week of meeting the demand.

Using the 27,000,000 tons surplus, industry could theoretically be maintained at its present capacity for eight weeks. This does not mean, however, that for eight weeks following the declaration of a strike by the coal miners, there will be available to every manufacturer a sufficient supply of coal, because in case of a strike the ordinary lines of distribution are so disarranged that there results great variation in the ability of different communities to secure needed supplies.



Farmers' Purchasing Power as Indicated by Prices Received by Agriculturalists for Ten Leading Farm Commodities and for Cattle.

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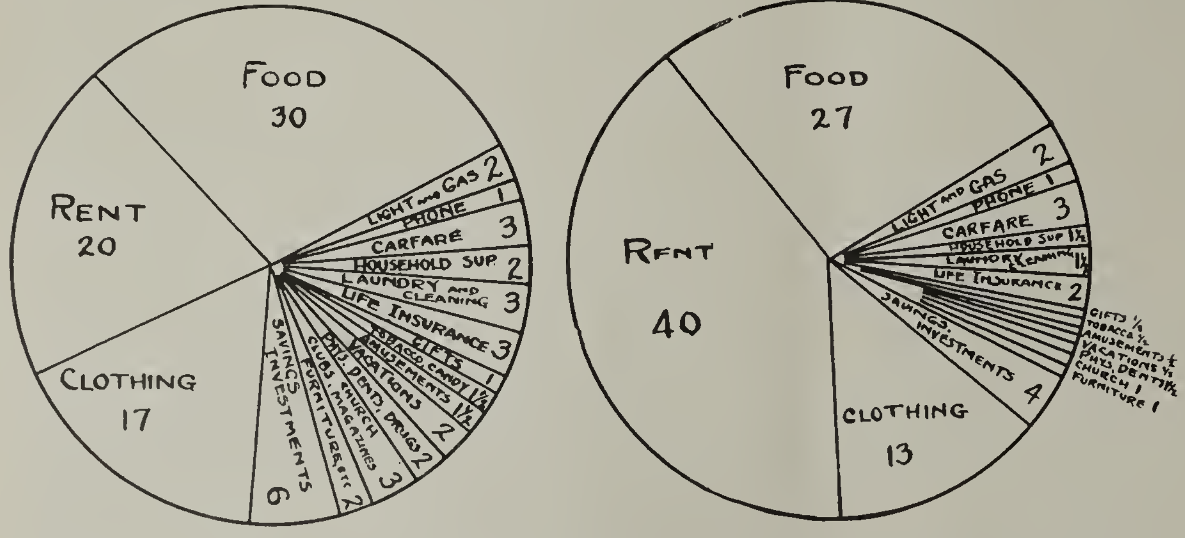
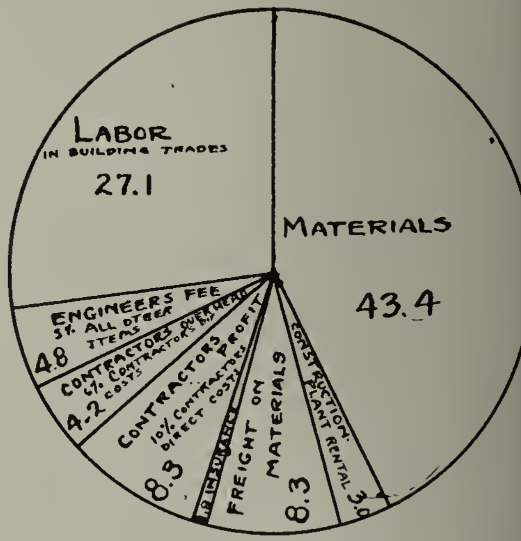
COMMON BRICK PRICE IS RISING

The outstanding feature of the reports from nearly 100 manufacturers for the month of February is a slight upward tendency in price, says the Common Brick Manufacturers' Association Monthly Digest of March 1. In some of the districts, however, there has been a lowering of the maximum prices, especially in the New England district, where brick are now selling for $17, or $3 cheaper than a month ago. For fully a year the price of common brick thruout the country has been stepping down



These Two Diagrams Tell a Story Which Is Strikingly Real and at the Same Time Deplorable. They Reveal the Manner in Which the Average Citizen Spent His Dollar in the Years 1913 (Left) and 1921 (Right). The Comparison Throws Much Light on the Present Business Conditions. High Rents Now Prevailing Have Throttled the Desire for Other Necessities and Lowered the Standard of Living. The Cure is More Homes.



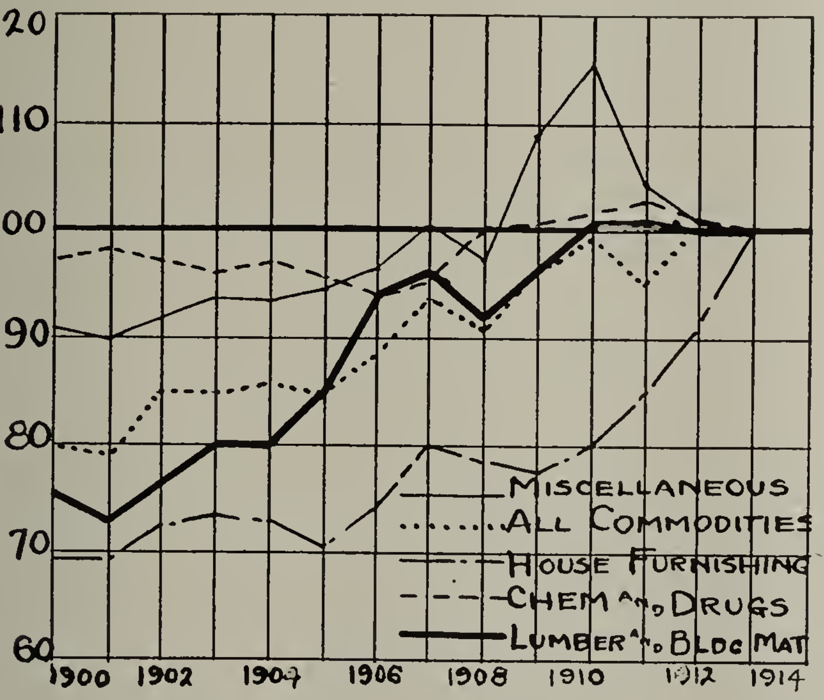
The Above Chart Was Prepared by Monks & Johnson, New York Architects and Engineers, and Shows the Proportion of the Cost of a Typical Industrial Business Which is Attributed to Each item of classification.

month by month, and February, 1922, is the first period in which there has been any tendency toward higher prices. This may in part be attributed to increased activity. Thruout the northern central group of states there has been a demand exceeding that of any winter months in the past three or four years. The quantity of brick on hand in 97 plants reporting has decreased during February. All orders on the books have increased slightly.

* * *

WHERE APPRENTICES ARE MOST NEEDED

The Building Trades Employers' Association of New York City recently made a survey of the employment situation in the building trades thruout the country. Among other interesting data it gives a list of the building trades in the order, as one might say, of their scarcity, showing the plasterers in greater demand than any other trade and putting concrete laborers, the supply of whom greatly exceeds the demand, at the bottom of the list, with the other trades in between in the following order: 1, Plasterers; 2, Terrazzo Workers; 3, Encaustic Tile Layers; 4, Elevator Constructors; 5, Marble Cutters and Setters; 6, Metallic Lathers; 7, Bricklayers; 8, Painters; 9, Steamfitters; 10, Mosaic Workers; 11, Plumbers; 12, Carpenters; 13, Plasterers' Helpers; 14, Sheetmetal Workers; 15, Cement Finishers; 16, Tar and Felt Roofers; 17, Hod Carriers; 18, Structural Iron Workers; 19, Hoisting Engineers; 20, Electrical Workers, and 21, Cement and Concrete Laborers.



Annual Wholesale Price Index of Various Commodities From 1900 to 1913, Using 1913 as 100.

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OHIO DRAIN TILE MEN MEET APRIL 12

The regular quarterly meeting of the Ohio Drain Tile Association, which held its annual meeting in Columbus several months ago will be held April 12 at Lima, Ohio. W. W. Lewis, of North Baltimore, is president; R. S. Dingledine, Columbus, vice-president; J. D. Rumsey, of Stryker, treasurer, and W. P. West, Columbus, secretary. Matters connected with the drain tile trade in Ohio will be discussed.

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NEW BRICK FROM POTASH BY-PRODUCT

A new variety of brick has been produced in the vicinity of New York. It is a by-product in the manufacture of potash. Potash exists in the green sand deposits in the Eastern Coast States, notably New Jersey and in its recovering a strongly cementitious by-product is obtained. The addition of sand and proper treatment results in a brick that is said to possess great strength and weather-resisting properties. It is a light green in color. Over 2,000,000 of these brick have already been manufactured by the controlling company, at its plant in New Brunswick, N. J., and it is stated that within a short time the new brick will be put on the market in large quantities.

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PUBLISH PAVING BRICK FOLDER

Number one of an attractive little eight-page folder entitled "Paving Brick News," has been published by the Eastern Paving Brick Manufacturers' Association. It is an interesting pamphlet which gives news on brick pavements and items which are likely to interest manufacturers of paving brick as well as highway builders.

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STANDARD CONSTRUCTION CONTRACT ASSURED

Thru the united efforts of a conference held in Washington recently, the standardization of construction contracts seems destined to be finally achieved. Engineers, architects and contractors appointed by engineering and other associated construction associations, were represented, and a plan was adopted which would ultimately produce a standard form of contract agreement which could be adapted for use in any part of the country and any phase of the construction industry.

The survey made by Brigadier-General R. C. Marshall, Jr., Chief of Construction Division of the U. S. Army during the war, showed that there are in common use today over 200 different forms of contracts. A study of these 200 contracts revealed that about two-thirds of all the provisions contained in each were common to all, and could very easily be included in one standard form.

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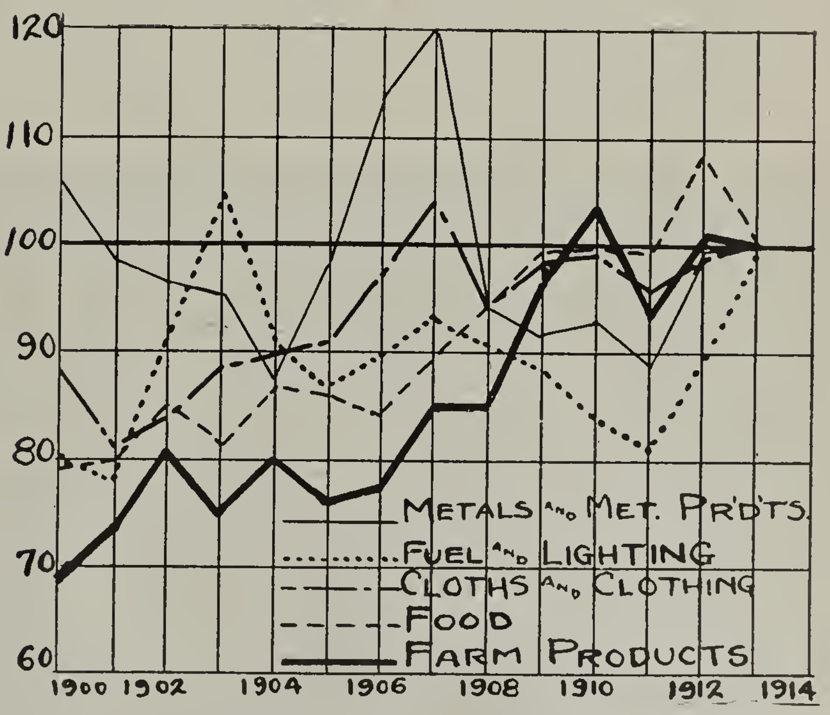
RAILROADS EARN OVER $5,500,000,000

According to the final reports received by the Interstate Commerce Commission for the year 1921, the aggregate revenues of the railroads of the country during the 12 months were $5,569,888,513, of which $3,925,000,000 was from freight, $1,153,901,180 from passengers, $104,641,000 from express, and $95,840,000 from mail. The aggregate operating expenses were $4,602,425,000 and net operating income $615,625,619.



Annual Wholesale Price Index of Various Commodities From 1900 to 1913, Using 1913 as 100.

"Worst Year" Fails to Curb R. M. A.

Refractories Manufacturers Association Holds Enthusiastic Convention at Chicago—Elect A. P. Taylor President—To Hold Next Meeting in Atlantic City

THE NINTH ANNUAL MEETING of the Refractories Manufacturers Association took place at the Drake Hotel, Chicago, March 15 and 16. At this meeting, which was very well attended, new officers were elected and matters of vital interest to the industry discussed. A paper read by W. A. Hull of the U. S. Bureau of Standards on "Government Specifications," and the retiring president's address, were especially commented on as of tremendous interest, and the secretary's report was an excellent presentation of the worthy work and value of the Refractories Manufacturers Association.

Mr. Donahoe, who as secretary has handled the affairs of the association in a most creditable manner during his stewardship, stated in his report that the organization had just passed thru one of the most depressing years in the history of the fire brick business, and had come thru in a healthy condition and found not wanting. The association is now represented at Washington in a capable manner and as a result its voice carries more weight and its policies are given greater consideration.

Has 97 Members

The Refractories Manufacturers Association has at the present time some 97 members, which is one less than last year, and which comprises approximately 80 per cent. of the industry. Considering the business conditions this is considered a good indication of the value of the organization.

One of the main adjuncts of the association is its research work at the Mellon Institute, Pittsburgh. Thru this laboratory the association membership is constantly striving to serve the public by obtaining data and information that will aid in the improvement of refractory products, working a direct benefit to the consumer which is ultimately passed on to the public.

In the five years that this fellowship has been maintained at the Mellon Institute, the receipts from industrial testing have amounted to $46,299, of which $16,619 was expended last year, indicating the increasing desire on the part of the refractory manufacturer to improve the quality of his product.

J. D. Ramsay of the Elk Fire Brick Co., St. Mary's Pa., in his eloquent address, remarked that he had thoroly enjoyed the opportunity to serve the association during the past two years. He recommended to the membership that the research work of the organization be enlarged; that the membership support the Refractories Accountants Institute, and he also suggested the forming of a Refractories Operatives Institute. He particularly urged hearty cooperation with the Department of Commerce and the Bureau of Standards.

Wants Refractories Industrial Survey Committee

Of particular moment was his recommendation to his successor that sincere effort be made to organize a Refractories Industrial Survey Committee, composed of 14 members, with a general chairman and individual members as chairmen of various groups. These chairmen are to have the prerogative of appointing assistants and delegates to aid them in their work, the idea being to conduct an industrial survey of each of the following phases of the refractories industry: (1) blast furnaces, (2) open-hearth furnaces, (3) heating, puddling and forges, (4) boilers (all types), (5) cement, lime, plaster, (6) window, plate and bottle glass, (7) annealing and malleable iron furnaces, (8) water and coal gas and gas producers, (9) cupola and gray iron furnaces, (10) oil refineries, (11) zinc, lead and copper smelters, (12) by-product coke ovens, (13) ceramic kilns, including terra cotta, whiteware, enamels, sewer pipe and brick kilns.

It was recommended by Mr. Ramsay that each of these chairmen report to the general chairman, and that this survey be printed in a tentative form and submitted to the membership at the next annual meeting, and in the following year, additions and corrections should be made and the report published in a permanent form to serve as a guide and textbook on refractory products; the member of each committee to be chosen according to his training and experience to take care of such work.

A. P. Taylor Elected New President

The officers proposed and elected unanimously for the ensuing year were: for president, A. P. Taylor of Cincinnati;

Delegates Attending the Ninth Annual Convention of the Refractories Manufacturers' Association, Held at the Drake Hotel, Chicago, Marc
His Predecessor,

vice-president, F. R. Valentine, Woodbridge, N. J.; treasurer, C. C. Edmonds, Pittsburgh, and secretary, F. W. Donahoe. New directors were elected as follows: R. A. B. Walsh of St. Louis, P. S. Kier and J. J. Brooks, Jr., of Pittsburgh,

W. A. Hull of the Bureau of Standards then read his most excellent paper on Government purchasing, in which he pointed out the lack of proper specifications in the matter of purchasing refractories. The Bureau of Standards, he stated, was selected to draft specifications ,and upon investigation found that some Government departments had no specifications whatever, and of those that had, there was a great variance as to the requirements in the specifications. Mr. Hull reported that the Bureau of Standards was eager to evolve some simple specifications that would be uniform and practical, and yet complete enough to be discriminating as to the quality of the brick.

The committee reports and other business details took up the remaining part of the meeting.

An excellent dinner at the Drake was enjoyed by the members on Wednesday evening. Several prominent men occupied the program, and addressed the delegates, and to relieve the strain of the strenuous sessions a humorist called into play his faculties and brought about the relaxation of the (brick) minds of those in attendance, softened them and doing its part to prepare them for the work attendant upon the last day of their meeting.

Next Meeting at Atlantic City

Sessions were resumed Thursday morning, and were in many respects extremely interesting, altho almost the entire time was taken up with discussions on various problems confronting the industry. A very fine and lengthy discussion on the question of freight rates took place in which members were unanimous in vigorously declaring that lower freight rates must be secured. It was resolved that a committee be appointed to look into the question and to see what it was advisable to do.

A round-table discussion regarding conditions in the plants represented by the men present was held. The general condition of the industry seems to be that business is not so very good, and most concerns are manufacturing on a below capacity basis, and turning out only such products as they have orders for. Members reporting were fairly optimistic as to the outlook, and the general belief is that business in the refractories industry will show a gradual improvement.

By vote of the membership present it was decided to hold the next meeting of the Refractories Manufacturers Association at Atlantic City during the week of June 26. This time and place was selected to give the association an opportunity to meet at the same time as the American Society for Testing Materials, which also meets in Atlantic City at that time.

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CLEAR TRADE ASSOCIATIONS GOOD NAME

At a meeting of the Executive Committee of the American Trade Association Executives held in Washington, January 30, at which were also present the officers and department heads of the Chamber of Commerce of the United States, a resolution was adopted making recommendation that the National Chamber's Board of Directors should instruct the appointment of a committee to study the question of activities of trade associations, the report of such committee to be made the basis of a referendum among the National Chamber's membership. At a meeting of the Chamber's Board shortly afterward, this recommendation was favorably acted upon.

Recent findings of the courts as to certain policies carried out by some trade associations has led to confusion, and in many cases trade associations are condemned as vicious combinations whose sole object is the fixing of prices, curtailment of production and division of territory. Hence it is the hope of the American Trade Associations' Executives that a referendum among the National Chamber's membership, which will be brought directly or indirectly before approximately 750,000 business men of this country, will concentrate public attention on the subject of trade association activity and will enable an intelligent understanding of the important relation the trade association bears to the welfare of the public.

Of particular moment to the clay products industry is the appointment of George A. Bass, president of the Hydraulic-Press Brick Co., on the committee which will make the important investigation and recommendation mentioned. The participation of this well known face brick manufacturer in the deliberations of the committee composed of nationally known manufacturers, attorneys and economists, will be almost a guarantee that if the report of the committee is made the basis of a referendum, as it undoubtedly will be, the questions to be balloted upon will very likely be directly applicable to the clay products industry.

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EASTERN ASSOCIATION HOLDS MEETING

The Brick Manufacturers' Association of Eastern Pennsylvania, Southern New Jersey and Delaware held a meeting at the Longacre Hotel, Philadelphia, Pa., on March 5. The gathering was in conjunction with a meeting of the Philadelphia Construction Conference, and a number of interesting matters were discussed, particularly with regard to spring building activities.

16. Almost 50 Members Were Present. A. P. Taylor, New President, Is Seated in the First Row, Twelfth from the Left and John D. Ramsay, diately Behind Him.

Badger Brick Man Cuts Delivery Cost

Evolves a Distribution System for Clay Products That Is Economical in First Cost and Economical in Operation

HOW TO LOWER COSTS in brick deliveries was the problem facing a Badger clay manufacturer, who, like a great many common brick producers, has a small plant several miles out in the country,—away from the railroad, and was unable to consider purchasing a motor truck because of the insufficient plant capacity to warrant such expense. However, this enterprising Wisconsin brick manufacturer not only devised a system that reduced his distribution cost over a dollar a thousand, but evolved a system that has wide application and can be used by large concerns as well as by the small producer, and also by building supply dealers, with a great saving in distribution costs.

Last August, Norman L. Meir, manager of the Mormon Coolie Brick Works, considered the advisability of experimenting with a certain type of trailer for hauling his brick from the plant to the jobs in the city. His establishment lies about five miles from La Crosse, Wis. It is a small, soft mud brick plant using the open air drying system, and the brick are burned in updraft kilns fired with coal, using a forced draft.

Trailer System Superior to Truck

The plant is situated about one-half mile from a railroad sidetrack and formerly all the brick were hauled by teams. Motor truck delivery was also tried, but the trailer transport system proved so much superior and the cost of the equipment is so low that Mr. Meir claims that there is not the slightest bit of doubt as to its greater value.

The trailers are simple, two-wheeled carts of 3½ to 4½ tons capacity, having a heavy channel iron frame of 5x1¾ inches. It is equipped with underslung semi-elliptic springs, altho the overslung may be put on in case it is desired to widen the body of the trailer to overlap the wheels. The wheels are Budd double disk steel wheels. The bearings are Timken roller bearings, and chrome vanadium steel axles are supplied. The trailer can be equipped with mud guards, and has a heavy drop-screw jack attached to the frame for stabilizing trailer in horizontal position. The length over all of the chassis is 12¾ feet. The length of the body space is 9 feet 3 inches; the width of the body space is 4 feet 3 inches, when springs are underslung.

Solid rubber tires 36x5 also form part of the equipment. These trailers, Mr. Meir states, can be obtained from him under these specifications for only $125 and at a slight additional cost can be equipped with coupling and fitted with a body. This cost would not exceed $35.

Use Fordson Tractor to Haul Trailers

To haul the trailers, a Fordson tractor is used, and two trailers are hauled per load. The tractor is run with kerosene, which costs little, and will consume but one gallon in a run of from four to five miles with two loaded trailers traveling at the rate of ten miles per hour. Figuring fuel at 14 cents per gallon for kerosene, and a distance of 4½ miles to the gallon, the cost is figured at but three cents per mile for fuel.

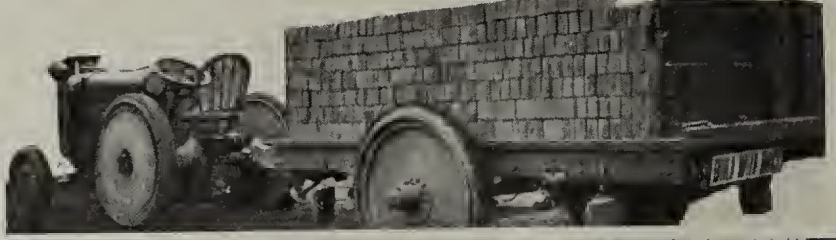
The Mormon Coolie Brick Works, also known as the Meir Brick Works, is at the present time delivering brick at a distance of five miles, and making five trips per day of nine hours. The brick are loaded in the trailers six rows wide, seven rows high, and 42 brick long. Thus each trailer hauls 1,750 brick, making a total of 3,500 brick on each trip. For delivering this total amount of 17,500 brick in one day, a distance of five miles, the total cost is only $1.35 per thousand, including items such as loading at the kiln, unloading, oil, grease, kerosene and depreciation.

Six trailers are used. By this method no time is lost with the tractor, and the tractor is idle only during the time it takes to couple up with the trailers at the kiln or destination.

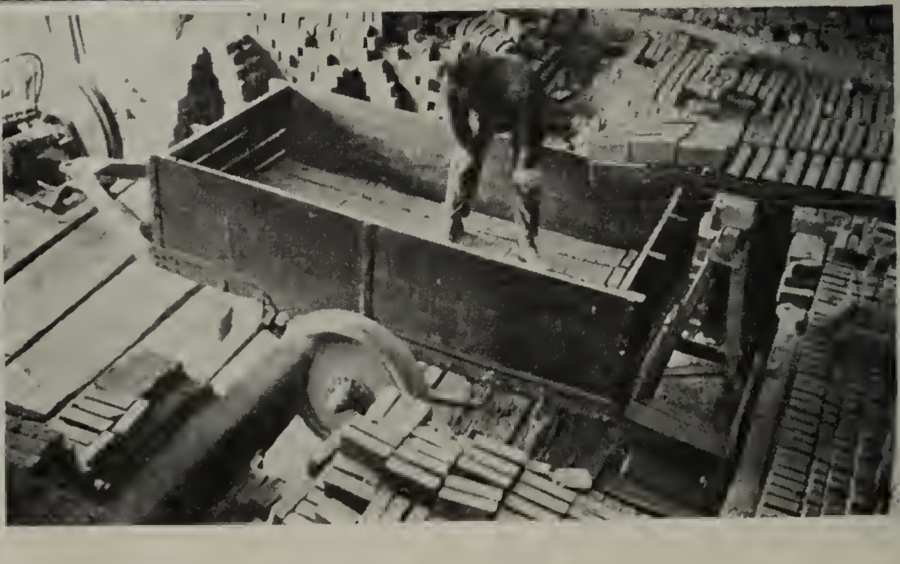
By the use of six trailers it always enables the Meir Brick Works to keep two of them in process of being loaded at the kiln, while two are in transit and the other two being unloaded at the job.

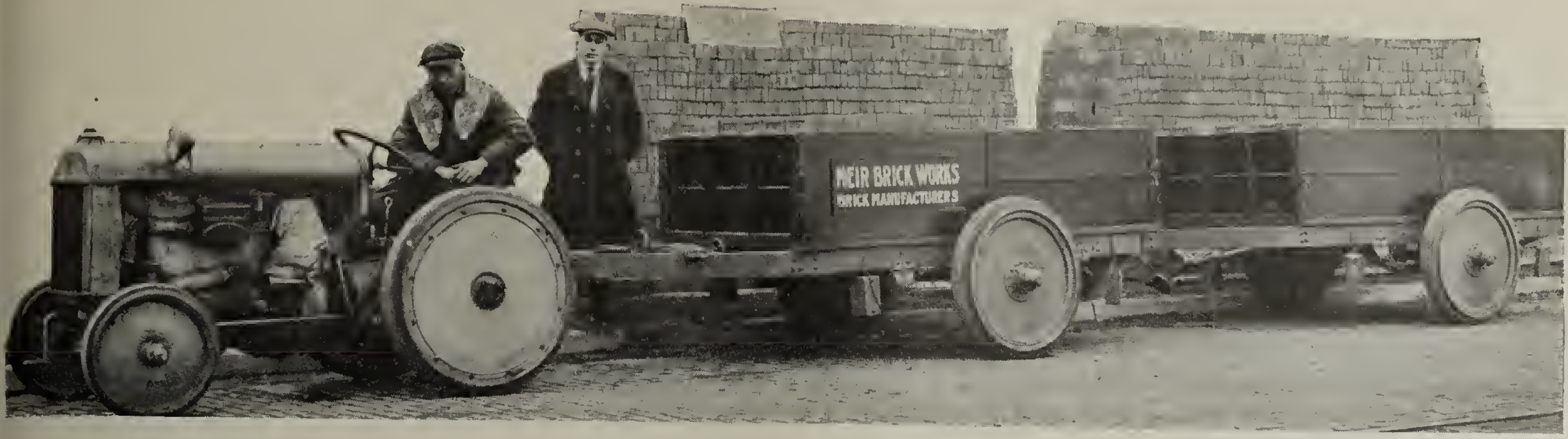
The brick are very easily unloaded from these trailers, and a man can unload them almost twice as fast as he could from a wagon or truck on account of the lower height of the body floor, since it measures only 30 inches from the ground. Similarly, it is also very handy to load the brick, for there is less distance of pitching. Moreover, the trailer is easily pushed around and can be handled by one man.

The Views on the Right Shows a Loaded Trailer. Below the Method of Coupling the Trailer to the Tractor Can Be Seen.



Because the Trailer Is Close to the Ground It Can Be Backed Into the Kiln and Easily Loaded as Shown Below.





The Meir Brick Transport System. A Fordson Tractor Hauls Two Trailers Which Have a Capacity of 1,750 Each. Norman L. Meir, Originator of the System, Is Standing Behind the Tractor in the Picture.

The cost of unloading at job is often eliminated, for the contractors are pleased to have the hod-carriers take the brick right from the truck, since it is easier handled in this manner, and by the time the next load reaches the job the trailers are often emptied. Also the breakage is reduced to practically nil by this system.

Can Load Cars Twice as Fast

Cars are being loaded twice as quickly as before, and at a great deal less cost per thousand. Moreover, the same equipment is used for unloading coal, and as much as 100 tons of coal have been unloaded in a day and brought from the railroad siding to the plant.

Louis E. Meir, brother of Norman L. Meir, manager of the brick works, is the local distributor for face brick and hollow tile, and he tells of an experiment with the trailer system whereby with but two men, in nine hours he delivered 13,000 face brick from a freight car to a job six blocks away, hauling one trailer while the other was being loaded. 1,200 brick were loaded per trailer. With a motor truck at least three men would have been required, and the cost would have been greater .

The beauty of the whole system lies in the fact that it can be used successfully in short hauls where motor trucks have heretofore been impracticable. Also it is adaptable for long hauls. Moreover, the trailers can be coupled to motor trucks, altho the Fordson tractor for small plants is cheaper, since with six trailers and the Fordson tractor the total investment is less than $2,000.

In soft, muddy places one trailer can be pulled out at a time and then coupled again where the road is better.

Due to the great success of the system, which is known as the Meir Brick Transport System, Mr. Meir has decided to give the benefit of his experience to other brick manufacturers, charging only a low price for these trailers, and hoping thereby to serve the industry.

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URGES LEGISLATION TO RELIEVE HOUSING

The Lockwood Housing Committee has submitted its first report to the New York State Legislature, and in it the committee declares the greatest need at present is proper and more liberal encouragement of loans for home building purposes. The report says that economic laws will not solve the problem, but building must be stimulated by legislation and the loosening of the purse-strings of banking institutions and insurance companies to borrowers of first mortgages. The committee proposes a new state enactment that will compel savings banks and interest companies to invest at least 40 per cent. of their future investable funds in first mortgage loans on improved property. An increase in homes and housing facilities will go a long way to bring about a reduction in the cost of living, since it is estimated that the item of housing represents about one-fifth of the cost of living in all the great cities of the United States.

Samuel Untermyer, who is chief counsel of the Lockwood Housing Committee in the following words sizes up the outlook in the whole United States: "The housing shortage is on the increase and menaces the city of New York with plague. The situation in New York City, while acute, is fairly general in the entire urban territory of the United States."

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N. P. B. M. A. TO GATHER STATISTICS

Following receipt of the correspondence between Secretary Hoover and Attorney-General H. M. Daugherty, relative to the legality of gathering and circulating statistics on production, consumption and available stocks, the National Paving Brick Manufacturers' Association announced that it is preparing to gather statistics of this nature.

Secretary of Commerce Hoover has repeatedly asked for statistics of this sort, but national trade associations have been rather conservative since the adverse decision of the United States Supreme Court in the hardwood lumber association case, in which a permanent injunction against the "open price" activities was granted.

The National Paving Brick Manufacturers' Association estimates authorization of a billion dollars for paving projects during the coming year, hence expects the production of vitrified brick to exceed that of last year which was the best in home markets since 1916.

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FIRE BRICK MARKETS OF CHINA AND INDIA

Interesting information regarding the fire brick markets in China and India has recently come to hand. The total importation of fire brick into China for 1920 was 2,796,117 pieces. Of this number the United States furnished 8,951; the Philippine Islands, 46,078; Japan and Korea, 1,460,280; Hongkong, 940,138; Great Britain, 84,580. Chinese importation of these materials has steadily decreased since 1918, when it was 8,190,654; this decreased in 1919 to 6,523,470. Contrary to the natural supposition, the share of the United States in the Chinese trade increased in 1918 to 246,678 and in 1919 to 456,690 pieces. The trade of Japan and Korea also decreased from 5,730,109 in 1918 to 4,412,030 in 1919. The trade of Great Britain shows some fluctuation, being 340,244 in 1918 and 493,629 in 1919. Hongkong trade shows a steady increase from 456,258 in 1918 to 639,493 in 1919. Russian exports of fire brick to China decreased considerably, being 1,124,627 in 1918 and 257,542 in 1920.

Trade returns for India show that in 1918-1919, 4,523,681 pieces of refractories were imported; in 1919-1920, 1,094,588. Of these the United States furnished in 1919, 422,507, and in 1920, 544. The exportation of fire brick from the United States to British India in 1919 was 40,000 and in 1920 240,000.

Heavy Clay Men Show Great Pep

70 Delegates Register at American Ceramic Society Convention for Heavy Clay Products Division—Plant Papers of Timely Interest Start Interesting Discussion

ALTHO ONLY THE SECOND TIME the heavy clay products division of the American Ceramic Society has met in convention, the 1922 meetings can be classed as a distinct success. Every meeting of the section was well attended, the official roster showing 70 delegates registered at the convention. Thruout the meetings intense interest was shown by all in attendance with the result that some very fine discussions took place.

The excellent beginning of the heavy clay products division augurs well for the future of that youthful but vigorous and enthusiastic body. The division certainly should have the support of every manufacturer of structural clay products who is not now a member of the American Ceramic Society.

On Tuesday, February 28, some 50 members of the division journeyed to the plant of the Hydraulic-Press Brick Co., where the research experiments of the four major associations are now being made. The expedition there saw in operation the apparatus being used and the kiln on which experiments were in progress.

The U. S. Bureau of Mines, which is cooperating with the American Face Brick Association, Common Brick Manufacturers' Association, National Paving Brick Manufacturers' Association and Hollow Building Tile Association in the research work, has tendered the use of its laboratory car to facilitate the carrying out of the work. The visitors were also given an opportunity to look over the car and apparatus in use.

C. Forrest Tefft Presides

Regular sessions of the division began on Tuesday afternoon. In the enforced absence of Ross C. Purdy, chairman of the division, and general secretary, C. Forrest Tefft presided at the meetings. Mr. Tefft introduced W. W. Ittner, who read a paper entitled "Water-Smoking with Induced Draft." Water-smoking, Mr. Ittner said, is often confused with drying, but this is wrong, it is a separate and distinct operation and should be treated as such. Water-smoking can be carried on as rapidly as possible as long as the ware is not injured. In tests made at his plant, Mr. Ittner stated, single brick had been dried in as short a time as 1½ hours, but this, of course, would not be possible on a tonnage basis. After much experimenting the drying time on his plant was reduced from 6 to 2½ days with little damage to the ware.

More rapid and safer water-smoking, he stated, can be accomplished by using induced draft. He recommended the use of a portable exhauster to facilitate the water-smoking.

A lengthy but extremely interesting paper on "Lamination, Discussion of Cause and Cure," was read by J. J. Fred Brand, of the Hydraulic-Press Brick Co. Mr. Brand covered this subject most extensively, giving those present the results of what must have been long and painstaking effort to overcome this evil. Mr. Brand told of the many cases of lamination and the various forms in which it occurs. He also explained differential lamination as distinguished by auger lamination. Too great pressure by the auger is the cause of much of this evil. Mr. Brand exhibited numerous samples illustrating the different types of lamination which occurred in the clay at his plant.

Lamination Hard to Obviate

Innumerable experiments were tried to obviate the difficulty but only poor results were obtained. Grog was added which helped to reduce lamination, but did not eliminate it. A peculiar thing which Mr. Brand's experiments brought out was that auger lamination usually occurs under conditions which eliminate differential lamination.

It is well-nigh impossible to dry laminated ware without cracking during the shrinking periods. One very remarkable fact which Mr. Brand discovered during the course of his experiments was that excluding air from the ware would make green clay impervious to disintegration under water. When two pieces of the same kind of clay were placed in water one would rapidly break down due to action of the water, whereas the piece from which the air had been taken would show no sign of dissolving or other disintegration. In direct contrast to other pieces of clay which Mr. Brand exhibited, the "airless" was exceedingly dense and solid. If some method could be devised whereby this method could be used on a commercial basis much of the trouble due to lamination would be eliminated.

Paper on Burning of Face Brick

A very interesting paper, prepared by L. B. Rainey, superintendent of the Fallston (Pa.) Fire Clay Co., was read in Mr. Rainey's absence by Maurice B. Greenough. The title of this paper was "The Burning of Face Brick." Mr. Rainey divided the burning operation into four periods or classes, water-smoking, dehydration, oxidation and vitrification. The first period is important, he said, and brick should always be water-smoked even when dried bone dry. Temperature must be raised slowly to prevent injury to the ware. In experiments which were made in a 32-foot round down-draft kiln, it was found that during the water-smoking period moisture settled in the bottom of the kiln during the first 15 hours and 17 hours were required to get rid of the settled moisture. One thing of importance, which Mr. Rainey brought out, is scumming. This must be carefully avoided. Carbon in the brick also might cause trouble unless thoroly oxidized. Heat must not be advanced until all carbon has been oxidized. The best temperature at which to burn off carbon, Mr. Rainey said, is 1,400 to 1,600 deg. F.

Mr. Rainey advocated the use of forced or induced draft as a means of saving fuel. In regard to colors, he stated that a reducing condition in the kiln produces a dark colored brick, while an excess of air will bring about the lighter shades. A thing to be watched in producing the desired colors is excessively rapid cooling, this tends to nullify the effect secured by flashing.

Advises Use of Apparatus

Mr. Rainey strongly recommended the use of apparatus to aid in burning. On a large plant, he said, it is desirable to place thermocouples in the bottom of a kiln periodically in addition to the regular installation in the kiln crown. He also stated that he would not think of burning without the use of cones, especially in finishing a kiln.

An interesting discussion followed the reading of this paper, during which it was brought out that especially in producing green brick, a test brick will often show the brightest of green colors but the reoxidation which takes place during slow cooling nullifies this color in the kiln.

A talk by Roy Smith of the Acme Brick Co., Fort Worth, Tex., on "Calcining Clay," concluded the Tuesday sessions.

Being troubled with an exceedingly plastic clay, the Acme Brick Co. installed a calcining kiln of the rotary type in use in the cement industry. A mixture of 25 per cent. calcined clay makes a satisfactory brick, showing no signs of lamination.

The kiln is 6x60 feet and is set at pitch of five-eighths inch to the foot.

Discussion on Costs

Chairman Tefft opened the Wednesday morning session by introducing Douglas F. Stevens of the Acme Brick Co., Danville, Ill. Mr. Stevens opened an extremely interesting discussion on costs. He stated that we are now embarked on a period where costs will be of considerable importance. Intensive competition will make absolute knowledge of costs necessary. One of the essential things in arriving at cost figures is to determine the actual amount of good ware turned out by the kilns. Spoiled ware should be kept track of in drying, kiln and rehandling periods. When computing costs manufacturers must not fail to take into consideration the loss sustained by selling culls at a low rate.

Several of the men present joined in the discussion which followed Mr. Stevens' remarks, and very valuable ideas were presented. The general opinion expressed was that cost finding was extremely important.

A. F. Potts told the division of the results of a number of tests which he had made regarding producer gas installations. His experiments, which were entirely theoretical, indicated that no saving could be made with producer gas due to the fact that a higher grade fuel was required.

Douglas Stevens stated that investigations which he made seemed to indicate that a central producer was necessary for efficient and economical operation, and that experienced men were also necessary.

Producer Gas Effects 50 Per Cent. Saving

A. S. Zopfi of Farber, Mo., stated that he was operating a continuous tunnel kiln with producer gas. He stated that approximately 800 pounds of coal were required to burn 1,000 brick. About 50 per cent. more fuel was required with the direct coal firing method. The same coal is now used in the gas producer as was formerly used for direct firing.

In the discussion on kiln operation which followed some valuable points were brought out. Roy Smith stated that for best results good equipment, good coal and good men were necessary The concensus of opinions expressed seemed to be that the industry is drifting inevitably to the tunnel kiln. While everyone was agreed that it would not be many years before the tunnel kiln became universal, several of the manufacturers did not believe it would be wise or profitable to tear down or scrap periodic kiln equipment where it was operating efficiently. J. L. Childs questioned whether a tunnel kiln can now be profitably operated by a plant making many types of ware.

Discussions of the heavy clay products division closed following an interesting interchange of opinion on Conveying Methods from Clay Bank to Clay Machine.

On Thursday morning a large number of men from the heavy clay products division set out on a tour of inspection thru various St. Louis plants. Plants visited were the St. Louis Terra Cotta Co., Mitchell Clay Manufacturing Co., Laclede-Christy Clay Products Co., (Laclede Plant), Hydraulic-Press Brick Co. and the Evens & Howard Fire Brick Co. On Friday a trip was arranged to the following plants: Parker Russell Mining & Manufacturing Co., Mound City Roofing Tile Co., Laclede-Christy Co. (Christy Plant), and Blackmer & Post Pipe Co.

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TESTS OF BOND CLAYS IN CRUCIBLES

Early in 1918 the Columbus Ceramic Experiment Station of the Bureau of Mines began an investigation of American bond clays and graphites to determine their crucible making properties in comparison with foreign clays and graphites. Work on the bond clays, which was completed in the fiscal year 1920, showed that better crucibles could be made from domestic clay than from imported clays. The testing of graphites on which some preliminary work had been done was then undertaken by the Bureau of Mines. Samples of seven graphites, from Ceylon, Madagascar, Canada, New York, Alaska, Texas, and Montana, of 400 pounds each were obtained. Ten crucibles of No. 70 size were made from each graphite for brass melting purposes, and six crucibles of No. 60 size for testing under steel melting practice. These crucibles were made in the plant of the Vesuvius Crucible Co., Swissvale, Pa. The brass melting crucibles were shipped to the plant of the Detroit (Mich.) Lubricator Co., where they were tested under regular brass melting practice.

Arrangements were made for testing the steel melting crucibles in the plant of the Simonds Manufacturing Co., Lockport, N. Y., but when the crucibles were ready for shipment word was received that the pit furnaces of the Simonds steel plant were not in operation, and as they have not been in operation since that time, it has been impossible to test the steel melting crucibles.

In the brass melting tests, the average number of heats of the crucibles shown by the different graphites are as follows: Alabama, 13.09; Madagascar, 12.44; Ceylon, 10.50; New York, 9.60; Texas, 6.80; Montana, 6.11; Canadian, 5.80. These results indicate that good brass melting crucibles can be made from Alabama graphite, and agree with the findings of previous work.

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SCHOOL GIRL DRAWS POSTER FOR A. F. B. A.

In addition to the immediate and direct results which the American Face Brick Association advertising is bringing, it is also building up good will in the minds of the younger generations, which will result in future business for the face brick manufacturer. The A. F. B. A. booklets are used in many schools, and a study of these booklets is in some instances included as part of the regular curriculum. The accompanying picture shows that this kind of advertising is not without effect. It is a reproduction of a poster designed and drawn by a little school girl of Roanoke, Ill.

The A. F. B. A. Advertising Is Reaching Even the Children In the Schools. Here Is a Poster Designed by a Little School Girl of Roanoke, Ill.

Two Illinois Associations May Combine

Three Ceramic Associations in Illinois Meet in One Day—Illinois Clay Manufacturers Association and Chicago Section of American Ceramic Society Consider Advisibility of Joining

CLAYWORKERS OF ILLINOIS had an exceedingly busy day on March 14, in Chicago. On this day the three clayworking organizations of the state, the Illinois-Indiana Division of the American Face Brick Association, the Illinois Clay Manufacturers' Association and the Chicago Section of the American Ceramic Society, held meetings. Approximately 27 men were present for these meetings.

The meeting of the Illinois-Indiana Division of the A. F. B. A. proved to be one of the best attended of the monthly sessions of that organization. A feature of the meeting was an address by Dr. Frank C. Honnold, secretary of the Illinois Coal Operators Association, who enlightened the face brick manufacturers on important phases facing the coal industry in the present crisis with the miners. He stated that every effort would be made by the operators to abolish certain objectionable features in the miners' agreement, points which were increasing the cost of producing coal and which were unjustifiable.

Says Present Coal Cost Is Too High

Dr. Honnold stated that he felt that the present cost of coal was too high, and that the demands of industry required a lower cost, and that lower costs could only be brought about by drawing up new agreements eliminating some of the very objectionable features that were mentioned in his address. From Dr. Honnold's talk it is quite obvious that there will be mine idleness after April 1, that the duration of this idleness is indeterminate, and that the mine operators will bend every effort to abolish certain restrictive measures that have tended to increase the price of coal to the consumer.

A talk on the value of local advertising was of particular interest at this session, and John Andres of the Standard Brick Co., Evansville, led the discussion by telling of the advertisements placed by his company in a local newspaper, and of the cooperation with the bricklayers, who were educated to be missionaries for brick construction. Mr. Mattes of the Decatur (Ill.) Brick Manufacturing Co. described the excellent results accomplished by newspaper, billboard and motion picture advertising in Decatur.

A program of a series of papers on subjects of vital interest to the manufacturer is being prepared, and future meetings will be attended with renewed interest because of the many excellent topics to be discussed that will appeal to every face brick manufacturer.

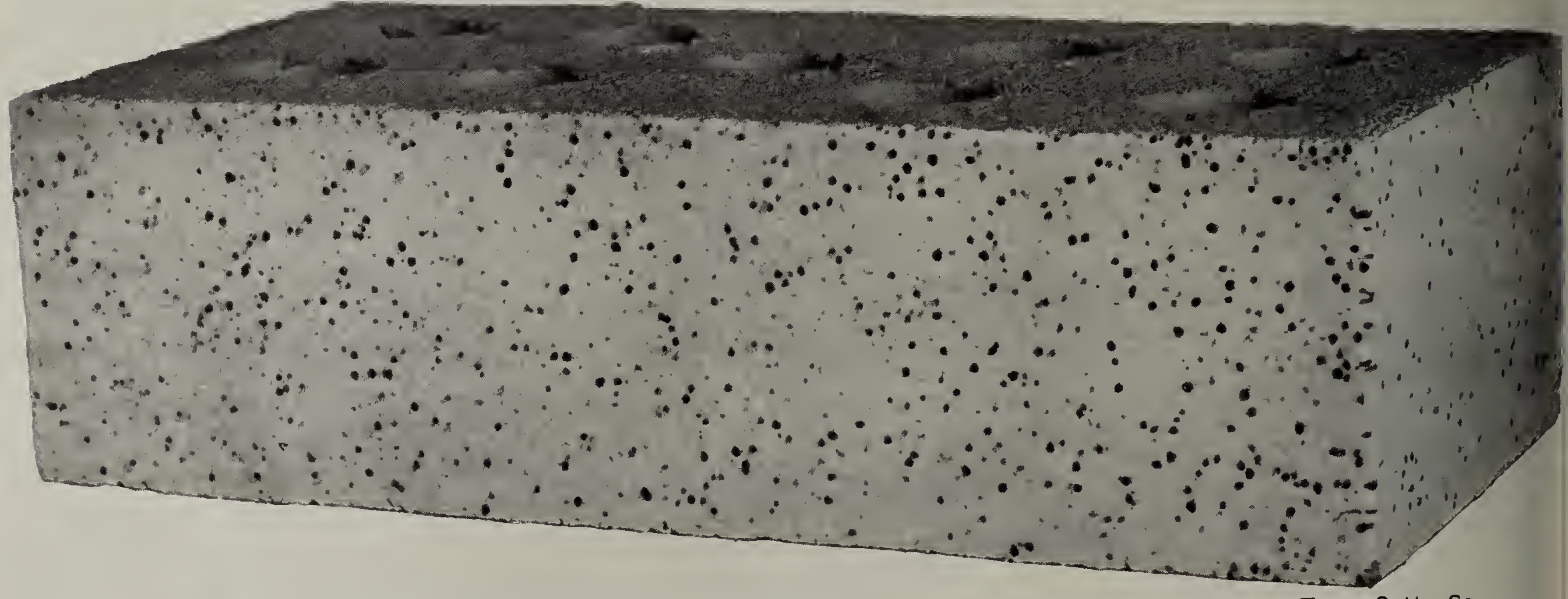
Annual Meeting of Illinois Clay Men

The annual convention of the Illinois Clay Manufacturers' Association was held in the Hotel La Salle, following the meeting of the Illinois-Indiana Division. The membership of the Illinois-Indiana Division were invited to the meeting which began with a luncheon at 1:30. During the luncheon regular business matters of the association were transacted, and following that president Eben Rodgers of the Alton (Ill.) Brick Co. introduced William D. Gates of the American Terra Cotta Co. Mr. Gates took the place of Albert H. Sheffield, secretary of the American Terra Cotta Co., and spoke on "The Relation of Sales to Manufacturing." He told the men that, in his opinion, the clayworkers in the past had been prone to sit back in their chairs and wait for orders to come in, instead of going out after the business. Mr. Gates advised as a great factor in selling, the injection of a greater amount of the personality of the clayworker. He stated that he believed there was a greater personality in the ceramic industry than in many others.

Following Mr. Gates' talk, T. A. Randall, secretary of the National Brick Manufacturers' Association, spoke on "Cooperation Between the National Associations of Manufacturers of Clay Products." Mr. Randall talked on the possibility of having all associations meet at one time and place, and expressed the hope that this would soon be possible.

Ross C. Purdy Speaks

The delegates then had the pleasure of listening to Ross C. Purdy, general secretary of the American Ceramic Society, who gave a talk on "The Relation of State Associations to Local Sections of the American Ceramic Society." Mr. Purdy in his talk pointed out the benefits which would accrue to the state association and the local section of the A. C. S. if they should decide to merge. This merging would not mean that either the state association or the local section of the A. C. S. would lose



A Single Fire Enamel Brick with Manganese Speckle of the Type Being Manufactured by the Northwestern Terra Cotta Co.

ts identity, but would merely bring the two together for a more horo and better discussion of the joint problems.

Mr. Purdy's talk aroused the interest of the Illinois Clay Manufacturers' Association, and a committee was appointed to ook into the advisability of joining the state association with he Chicago Section of the A. C. S.

H. A. Jung, commissioner of the National Clay Products Inlustries Association, gave a brief outline of what his organiza- ion is doing to establish and maintain amiable industrial re- ationship between the employer and employe in a clay plant.

The old officers were re-elected to serve another year and are: Eben Rodgers, Alton (Ill.) Brick Co., president; J. A. Reeves, ales manager, Streator (Ill.) Drain Tile Co., vice-president; Prof. Cullen W. Parmelee, Ceramics Department, University of llinois, secretary.

Meeting of Chicago Section of A. C. S.

At 6 P. M. the Chicago Section of the A. C. S. held a meetng to which the Illinois Clay Manufacturers' Association and he Illinois-Indiana Division of the American Face Brick Assoiation were invited. The meeting was held at the Morrison Hotel and several very interesting discussions took place.

F. L. Steinhoff, chairman of the local section, turned the neeting over to Willam D. Gates, who presided.

D. F. Albery of the Northwestern Terra Cotta Co., Chicago, ead a short but highly interesting paper on "The Manufacture f Wire Cut Single Fire Enamel Brick." Mr. Albery's paper lescribed the methods used to manufacture the new enamel brick vhich the Northwestern Terra Cotta Co. is now putting on he market. This is a brick with a No. 2 fire clay body, with n enameled face of any color or texture which it is possible to roduce in terra cotta. The reason for manufacturing this rick, Mr. Albery stated, was to use them as a filler for he tunnel kiln which the Northwestern Co. is operating. It esembles an ordinary face brick in size and shape, and has hree holes thru the body. A nine hole brick was first made ut it was decided to go back to the three holes which made a tronger brick and one more convenient to handle. It is manuactured on an auger brick machine like an ordinary face brick. he enamel face is sprayed on after the brick have been dried, nd the brick are subjected to only one burn. It is said to take ine hours of labor per M to spray the brick and the enamel osts approximately $1.30 per M.

After Mr. Albery's interesting talk, H. T. Bellamy related is experiences with a new refractory for furnaces. The new efractory brick which he described as zirconium silicate, has iven very much better results than the ordinary refractory vhich was formerly used at his plant.

May Hold Next Meeting in Danville

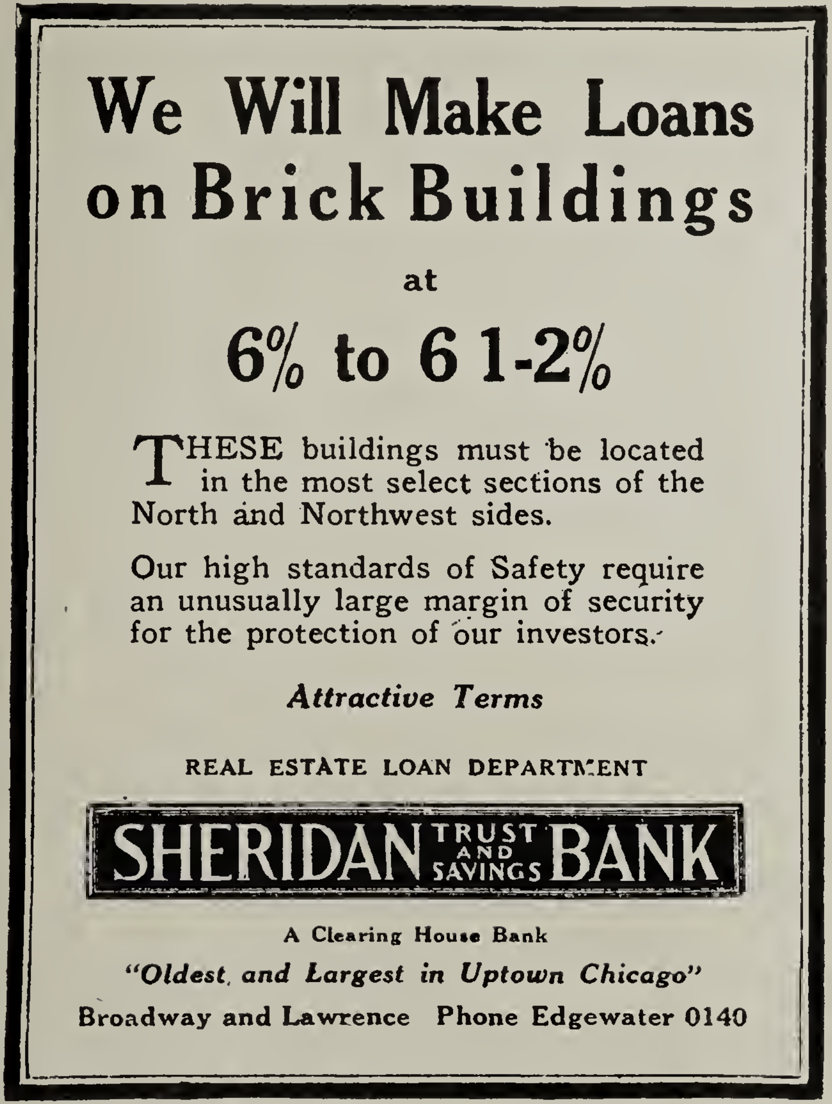
Mr. Bellamy's talk started an extremely interesting discus- ion on this new zirconium refractory, during which it was rought out that block manufactured of this material have a usion point of 2,500 deg. C. or approximately 4,300 deg. F. eposits of this mineral are found in a strip of beach along the lorida coast approximately 16 miles long, right near the water's dge, and just between the water and sand dune formations. he mineral is gotten in a fairly pure state, as the elements have ffected a natural separation of this heavier mineral and beach and.

Following this discussion, the chairman introduced Mr. Purdy, ho spoke on essentially the same subject as that on which he oke to the Illinois Clay Manufacturers' Association. In addi- on, Mr. Purdy urged that the support of the clay manufactur- s be given the American Ceramic Society, and pointed out the ecessity for more corporation members in this association.

Douglas F. Stevens, manager of the Acme Brick Co., Danlle, Ill., extended a hearty invitation to the Chicago Section the American Ceramic Society to hold their next meeting Danville.

A BOOST FOR BRICK HOMES

The advertisement reproduced here was run in a recent issue of the Chicago Tribune by the Sheridan Trust & Savings Bank. It is a great boost for brick, for the company clearly states they will loan money on brick homes, as they must have adequate protection for their funds. This shows the high esteem in which a brick house is held by those who lend the money to build.



We Will Make Loans on Brick Buildings

at

6% to 6 1-2%

THESE buildings must be located in the most select sections of the North and Northwest sides.

Our high standards of Safety require an unusually large margin of security for the protection of our investors.

Attractive Terms

REAL ESTATE LOAN DEPARTMENT

SHERIDAN TRUST AND SAVINGS BANK

A Clearing House Bank

"Oldest, and Largest in Uptown Chicago"

Broadway and Lawrence Phone Edgewater 0140

This Advertisement Appeared in the Chicago Tribune and Shows the Value a Brick Home Has.

✻ ✻ ✻

WORK ON SIMPLIFICATION OF MATERIALS

Simplification of building materials as a means of eliminating waste in industry was discussed at a recent conference held between officials of the Department of Commerce and representatives of architectural, engineering and building organizations. The meeting expressed itself as being in full accord with Secretary Hoover's program for elimination of waste as a major means to the stimulation of American business. In selecting the items of building materials to be given attention first, the following were designated: Mill work, plumbing, heating, interior wall construction, hardware, lighting fixtures, clay products, the latter including brick, tile and all kinds of terra cotta, sewer pipe, and so forth. In giving these items attention the department will form sub-committees to bring together the manufacturers and others having to do with each particular commodity or service.

✻ ✻ ✻

SUSPEND TEXAS RATE INCREASES

The Interstate Commerce Commission of the United States has suspended the increased rates on brick from Texas points to interstate destinations, as proposed by the carriers, until July 2.

Accounting to Eliminate Waste

Second of Two Articles on Estimating Costs in Various Departments to Eliminate and Fix Responsibility for Waste

By G. W. Greenwood

Treasurer, United Refractories Co., Dunbar, Pa.

THE PREVIOUS ARTICLE outlined a method by which each department sold its product to the next at a price which covered its initial cost, the cost of the direct labor expended in this department, plus the money value of the loss due to broken and spoiled brick.

The example there given may be summarized as follows:

A—MOLDING

Molding	400,000@$5.00	$2,000.00	
Sold to B	380,000@ 5.26316		$2,000.00

B—SETTING

Bought from A	380,000@$5.26316	2,000.00	
Setting	380,000@ 1.20	456.00	
Sold to C	380,000@ 6.46316		2,456.00

C—BURNING

Bought from B	380,000@$6.46316	2,456.00	....
Burning	380,000@ 1.00	380.00	
Sold to D	368,600@ 7.69398		2,836.00

D—HANDLING

Bought from C	368,600@$7.69398	2,836.00	
Stocking	368,600@ .80	294.88	
Loading	364,914@ .80	291.93	
Sold to E	364,914@ 9.37978		3,422.81

E—SALES

Bought from D	364,914@$9.37978	3,422.81	

As each department was assumed to perform its function at the standard cost and to sustain the standard loss, each account balances except the last, which is not really a part of the series of standard costs. This last item will, however, merit a careful study at some future time.

This simple summary cannot be used because it will not differentiate between variations from standard cost and variations from standard losses or breakage; and it is too condensed for use when we come to take inventories into consideration.

We will now consider the same problems, except that the actual losses are as follows:

Molding	3 per cent.
Burning	4 per cent.
Shed	2 per cent.

which is again a little less than nine per cent.

The solution in this case is as follows:

A—MOLDING

Molding	400,000@$5.00	$2,000.00	
Sold to B	388,000@ 5.00		$1,940.00
Loss	12,000@ 5.00		60.00

RESERVE FOR LOSS IN DRYING

Lost	12,000@$5.00	60.00	
Sold to B	388,000@ .26316		102.11

B—SETTING

Bought from A	388,000@$ 5.26316	2,042.11	
Setting	388,000@ 1.20	465.60	
Sold to C	388,000@ 6.46316		2,507.71

C—BURNING

Bought from B	388,000@$ 6.46316	2,507.71	
Burning	388,000@ 1.00	388.00	
Sold to D	372,480@ 7.46316		2,779.88
Lost	15,520@ 7.46316		115.83

RESERVE FOR LOSS IN BURNING

Lost	15,520@$ 7.46316	115.83	
Sold to D	372,480@ .23082		85.98

D—HANDLING

Bought from C	372,480@$ 7.69398	2,865.86	
Stocking	372,480@ .80	297.98	
Loading	365,030@ .80	292.02	
Sold to E	365,030@ 9.29398		3,392.58
Lost	7,450@ 8.49398		63.28

RESERVE FOR SHED LOSS

Lost	7,450@$ 8.49398	63.28	
Sold to E	365,030@ .08580		31.32

E—SALES

Bought from D	365,030@$ 9.37978		3,423.90

The total direct labor cost for all departments is $3,443.60, which is $19.70 less than the charge to the sales.

This is the net debit charged to the three reserves for breakage. the balance in the first reserve being favorable and in the other two unfavorable. A should be commended for his showing, while C and D should be asked for explanations.

More Complicated Problem

Let us now consider a problem considerably more complicated wherein the actual direct labor costs differ from the standard, and the losses also differ; and that in addition to these, there are inventories of brick on hand in various departments at the close of the period.

As before, B, C, D, E buy brick for the respective previous departments at stated standard prices, part of which (except in the case of credits to B) goes to the direct labor account and part to the reserve for loss due to spoiled and broken brick.

A—MOLDING

Molding	400,000 actual cost	$ 2,100.00	
Sold to B	300,000@$ 5.00		$ 1,500.00
Inventory	90,000@ 5.00		450.00
Lost	10,000@ 5.00		50.00

RESERVE FOR LOSS IN DRYING

Lost	10,000@$ 5.00	50.00	
Sold to B	300,000@ .26316		78.95

B—SETTING

Bought from A	300,000@$ 5.26316	1,578.95	
Setting	300,000 actual cost	350.00	
Sold to C	300,000@$ 6.46316		1,938.95

C—BURNING

Bought from B	300,000@$ 6.46316	1,938.95	
Burning	300,000 actual cost	275.00	
Sold to D	200,000@$ 7.46316		1,492.63
Inventory	90,000@ 7.46316		671.69
Lost	10,000@ 7.46316		74.63

RESERVE FOR LOSS IN BURNING

Lost	10,000@$ 7.46316	74.63	
Sold to D	200,000@ .23082		46.17

D—HANDLING

Bought from C	200,000@$ 7.69398	1,538.80	
Stocking	200,000 actual cost	150.00	
Loading	150,000 actual cost	110.00	

Sold to E	150,000@$ 9.29398		1,394.10
Inventory	49,000@ 8.49398		416.21
Lost	1,000@ 8.49398		8.49

RESERVE FOR LOSS IN BURNING

Lost	1,000@$ 8.49398	8.49	
Sold to E	150,000@ .08580		12.87

E SALES

Bought from D	150,000@$ 9.37978	1,406.97	

In this example, the total direct labor charges are as follows:

Molding	$2,100.00
Setting	350.00
Burning	275.00
Stocking	150.00
Loading	110.00
Total	2,985.00

Opposed to these items we have the charge against the sales department of $1,406.97 and inventories totaling $1,537.90, leaving a net debit of $40.13.

This in turn is accounted for by the actual losses and gains shown by the different accounts, and by the balances shown by the reserves, thus:

Account A, Loss	$100.00
Account B, Gain	10.00
Account C, Gain	25.00
Account D, Gain	20.00
Net Loss	45.00
Reserve for Loss in Drying, Credit	$ 28.95
Reserve for Loss in Burning, Debit	28.46
Reserve for Shed Loss, Credit	4.38
Net Credit in Reserve Accounts	4.87

Eventually these reserves will be closed into losses and gains.

For instance, when the 90,000 on the dry floor (or in tunnels) are all set, there should be an additional credit to the first reserve; unless there should be an abnormal loss. And the reserve could then be closed out into an equivalent gain.

Let us pause for a minute and consider the discredited method of long division. Taking the direct labor costs enumerated above, amounting to $2,985.00, by which should one divide the various elements? By the number of green brick molded? What relation is there between this number and the number stocked or loaded for shipment? What would one do with the quotients after obtaining them—add them and get—what? What would one do in a month when none were made, but the other departments were more or less active? Divide by zero? Or if one uses a different factor each time, what disposition is made of the losses? And which of the divisors is used for indirect labor, salaries, etc.?

Trace Trouble to Right Department

On the other hand, instead of this chaos, we have assumed that when all standards are met, then out of the selling price $9.37970 is required to cover the direct labor costs. If this amount fails to cover it, we know just what departments fell down and to what extent they failed in actual dollars and cents.

The method outlined above is capable of extended application. It takes less time than it requires to write up the subject. So far as the writer knows, it is the only way to uncover waste and to reveal efficiencies.

A brick machine which would pay for itself in a year would be eagerly sought for. Accounting along the above lines will pay for itself several times over every year. It can be undertaken piecemeal, being added to like a sectional bookcase. No attempt should be made to cover an extended range in a short time. It can be done with no derangement of the system of bookkeeping.

In actual practice this series of accounts and reserves can be presented in the form of a table with several columns, with supporting papers making the report quite convenient for executive use.

* * *

Experimental Sections Prove Low Upkeep Cost of Brick Roads

STANLEY L. KNISELY, economist of the National Paving Brick Manufacturers' Association of America, Cleveland, Ohio, has just finished compiling data illustrative of the superior conomic advantages of vitrified brick over other paving ma- erials.

As a basis for his deductions Mr. Knisely has considered fficial reports of the Byberry-Bensalem Service Test Road, as ublished by the city of Philadelphia, and the Chevy Chase oadway built by the Department of Agriculture, through the Bureau of Public Roads. These roads are practically the only oadway built by the Department of Agriculture, thru the ne basis for illustrative statistics issued from outside sources alculated to aid the various interests in the building of roads.

The Byberry-Bensalem stretch is between New York and Philadelphia and during the war it was compelled to bear the runt of the abnormal heavy inter-city traffic, which contingency ad not been foreseen. Maintenance was not neglected and the ost approved scientific methods were used.

In the main the stretch consisted of five different types of adway, there being several sections of each type intermingled ong the stretch. Following are statistics compiled by Mr. nisely from the official Philadelphia report:

The number of sections of each type were as follows:

1. Seven sections brick on four-inch concrete base; 2, three ctions five-inch concrete (all were partially or completely surfaced with asphalt top 1916-18) 3, two sections, one five-ch Hassan concrete, one bicomac concrete; 4, six sections tuminous concrete; 6, eight sections macadam.

The results of the tests showed the following:

1. The maintenance cost of the brick sections by weighted average, was $.0082 per square yard per year or $86.592 per mile of 18-foot roadway per year.

2. The five-inch concrete sections averaged $.1907 per square yard per year or $2,013.792 per mile of 18-foot roadway per year.

3. The two sections of concrete averaged $.1402 per square yard per year or $1,480.512 for the mile stretch per year.

4. The bituminous concrete averaged $.1198 per square yard per year, or $1,286.088 for the mile stretch for each year.

5. The macadam averaged $.0739 per square yard per year or $780.384 for the 18-foot stretch.

No Repairs on Chevy Chase Road

These figures, says Mr. Knisely, are fully borne out by the Chevy Chase experimental roadway in Maryland, where vitrified brick showed an actual maintenance cost of nothing for a 16-foot roadway over a mile stretch as against $230.90 for all kinds of bituminous concrete, and $501.21 for cement concrete. It might be added by way of explanation that the last bulletin of the Bureau of Public Roads has charged the cost of restoring an earth fill to the maintenance on the brick experiment, but further makes explanation of this fact and states that this was the only maintenance with the experiment ever had.

The experiment on the Byberry-Bensalem road covered the period between 1913 and 1920, while the Chevy Chase tests began in 1912.

Ontario Clay Men Meet at Chatham

Twenty-fifth Annual Convention of Western Ontario Clayworkers Association Entirely Successful—About 40 Delegates in Attendance—Reelect Old Officers

By A. L. McCready

THE TWENTY-FIFTH ANNUAL Convention of the Western Ontario Clayworkers' Association was held in the Chatham, Ontario, Chamber of Commerce Building on Wednesday and Thursday, March 8 and 9. Nearly 40 delegates were present, besides a number of outside speakers and others interested in the work of the association. Several interesting addresses and papers were heard during the convention, and a commendable feature of the program lay in the short discussions which followed each paper or address.

The convention opened on Wednesday morning with prayer by the Rev. A. S. Orton, and address of welcome by Mayor Harrington and Manager Landon, of the Chamber of Commerce. President Wehlann, of Cairo, replied in a fitting manner and extended greetings to those present. The convention then settled down to routine business and the disposal of the reading of the minutes and the treasurer's and auditor's reports, after which the meeting adjourned until the afternoon session.

Power Conveyances for Lower Production Costs

With the opening of the afternoon session, at 2:30 p. m., J. W. Taylor, of the Clark Tructractor Co., of Buchanan, Mich., spoke on the subject of power conveyances and their advantages in pit and yard transportation. Mr. Taylor had come prepared to show illustrations of his subject, but regretted that the non-arrival of films defeated this intention.

Albert H. Blake, of Sheldens, Galt, Ont., treated the subject of "Fans in the Ceramic Industry." He dealt particularly with the summer open air plant and the changing of such plants into dryer plants.

J. S. Sands, of the Buckeye Traction Ditcher Co., Chatham, gave an address on the "Remedial Legislation on Drainage Problems, and the Tile, Stone and Timber Act." Mr. Sands' affiliation with the Ontario Farm Drainage Association and his interest in the work placed him in a position to touch on the pertinent points of the subject.

Coal Storage Discussed

A particularly interesting address of the afternoon was given by O. L. Palmer, of the Looney Creek Coal Co., of Detroit, Mich. He dealt with his subject in an authoritative manner, treating of the combustible qualities of coal and its particular adaptation as a fuel in the ceramic industry.

The above papers and addresses concluded the program of the first day and the convention adjourned at 5:30 P. M.

The proceedings of the last day were much of a "Get Together" spirit, and pronounced by the president as one of the most beneficial he had ever attended. The usual annual banquet was dispensed with for the year and was replaced by an informal dinner held at noon in the Hotel Sanita. W. McCredie, of Lyons, the veteran of the association was present for the day and proved the life of the party. Mr. McCredie was made a life member at the last convention and has the distinction of having been in the business for over 50 years.

Among the addresses of the Thursday session was one in the morning by V. C. Lowell, B. S. A., Drainage Section of the Department of Agriculture, Chatham, on "Cooperation of Farmers and Tile Makers to Speed Up Consumption of Drain Tile." This subject he further enlarged upon during the afternoon, pointing out how tile men, the Drainage Association and the farmer could cooperate for their mutual benefit. He advocated the education of the consumer to the benefits of tile drainage and how best the farmer might procure the money toward such work.

C. V. Saunders, of the Windsor Canadian Sirocco Co., gave a splendid talk on "Fans, Blowers and Dryers and the Utilizing of Waste Heat in the Burning and Drying of Clay Wares."

Suggests Assigning Subjects

A suggestion of importance in asking for papers or addresses from representatives of firms and companies was made by Mr. Chambers, of the Fate-Root-Heath Co., Plymouth, Ohio, during his talk. He suggested that when inviting machinery or equipment men to speak before a convention that they be assigned a certain subject that the delegates are particularly interested in hearing. In this way, he pointed out, the speaker can better prepare himself and feel that his subject will not necessarily overlap that of some other speaker.

H. C. Baird, of Baird & Sons, Parkhill, Ont., in a short talk exhibited his willingness to help any or all members solve any problems that might confront them in their work A vote of thanks was extended thru the secretary for the offer and also for a munificent donation Mr. Baird had given the association for the furtherance of their work.

Mr. McCredie spoke on "Cooperation," but advised against overdoing it to the extent of a menace. In other words the idea could be carried to such an extent that it would result in the neglect of one's own individual interests.

National Association Invites Joint Convention

An invitation was extended by representatives of the Canadian National Clay Products' Association for the Western Ontario Association to meet with them in a joint convention next year at a point not more distant than Hamilton Ont., and on regular motion this invitation was accepted.

President Wehlann also suggested a plan whereby branches of the association might be organized and delegates from each branch sent to meet with the C. N. C. P. A As it stood members in distant parts might not find it convenient to attend in a body when the national convention should be held at some distant point in the Dominion.

Ryland H. New, in replying, stated the plan had its advantages, but felt that the time was not yet ripe for puttin it into effect.

During the informal discussions of the afternoon the sale tax came up for consideration. The consumer ultimatel pays this tax, and while some advocated getting behind th farmer and helping him lighten his burden, others felt tha it was up to the farmer to organize first and then for the manufacturer to stand behind him.

Two committees were appointed, one composed of President Wehlann, vice-president Hallatt and secretary Armstrong to act as a legislative committee with regard to proposed or suggested changes in the Sales Tax or Drainage Acts, and the other committee, composed of W. McCredie, Mr. Baird and the president, was appointed following a resolution endorsing suggested changes in the Drainage Act as outlined by speakers on the subject.

Want Plain Talking in Open Discussions

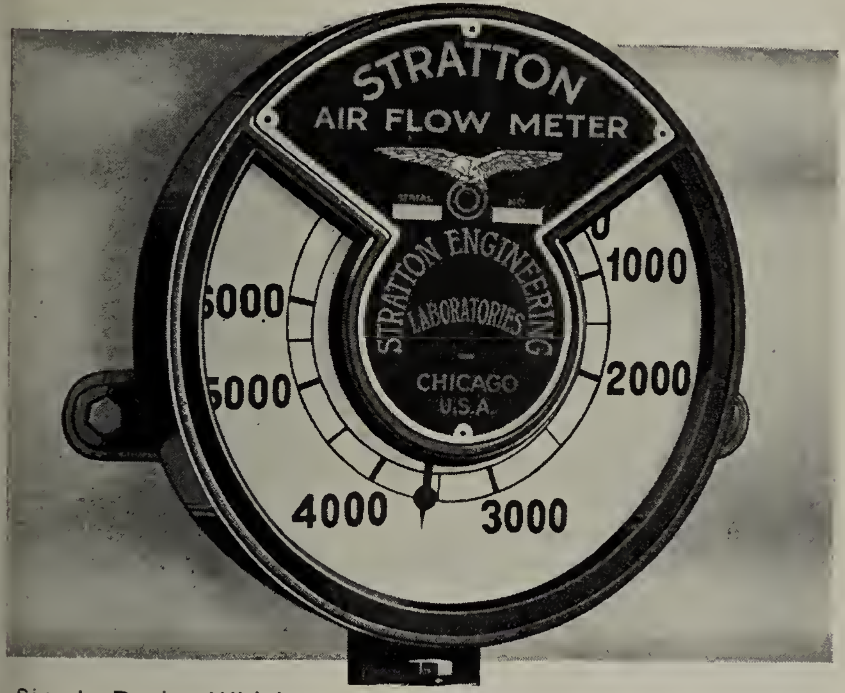
Another feature of the open discussions was advocated by one of the speakers who voiced the opinion that it was not necessary to be too zealous of trade secrets or business systems during open convention. In other words by placing all cards on the table the mutual benefit will be enhanced. It was not necessary to give away anything vital in so doing, but each operator has found some system that has helped him over the rough spots and by outlining it he may assist a neighbor thru a like difficulty. Drop the reserve and talk shop, as it were, and thus make the best of the open discussion, or the social afternoon as it was worded on the program.

Prior to adjournment at 5:00 P. M., the officers of the past year were reelected by mutual consent. Alfred Wehlann, of Cairo, president; H. H. Hallatt, of Tilbury, first vice-president; R. T. McDonald, of Bridgen, second vice-president; J. E. Reid, of Tilbury, third vice-president; and G. E. Armstrong, of Fletcher, secretary-treasurer. All other committees remain as before.

Appreciation was extended the Chamber of Commerce for their assistance in making the convention a success, and also for the invitation to make Chatham the place of their next convention, which invitation was left in the hands of the committee. The session closed with the feeling that it had been a marked success in every way possible.

New Apparatus Will Measure Air Flow in Dryer or Kiln

A SURVEY of clay products dryer equipment has indicated the fact that much greater efficiency would be obtained if operators would establish and maintain a correct air supply. Air, upon entering the tunnel of a dryer or a chamber, will absorb a vast amount of moisture in relation to its temperature and saturation. When it enters the tunnel, it will continue to absorb moisture until it is fully saturated. If the air is not properly removed from the dryer when it is saturated by means of rapid circulation, it will do more damage than good. An exaggerated case of this would be—to inject fully saturated air into a dryer tunnel, heated to 300 deg. F., under which condition coming in contact with cold clay, condensation would take place and the brick or clay product would be deluged with moisture. This may produce scumming or misshapen ware.



Simple Device Which Measures Accurately the Volume of Air Delivered to Dryers or Kiln.

The foregoing dictates that, since 1,000 cubic feet of air at a given temperature can absorb only a certain amount of water, when it has absorbed this amount of water it must immediately be dispelled from the tunnel, and not come in contact with cold surfaces where the saturated air will be condensed.

It is obvious, then, that careful consideration must be given to the volume of air, and its velocity thru a dryer tunnel. Careful observation must be made to insure that the volume of air passing thru the dryer moves fast enough so that it will have attained a certain degree of saturation, just as it leaves the dryer. Moreover, it is also necessary that this air be moved not too quickly so that the fans are operating wastefully in drawing too much air thru the dryer tunnels or cracking the ware because of too dry air.

The Stratton air-flow meter is a new device that has been developed for the purpose of indicating, correctly, the volume of air delivered to the dryers, and by knowing the volume of air and its temperature, and referring to tables which show the amount of moisture 1,000 cubic feet of air can absorb, the dryer can at all times be operated at its maximum capacity. Having once established this figure, it is then only necessary to maintain the same volume as measured by the air-flow meter, and the same temperatures, and considerable waste will be eliminated in the operation of dryers.

It is a well known fact that the different tunnels of a tunnel dryer operate at variance. Some tunnels give satisfactory results and others are less efficient. With the use of this air-flow meter, temperatures and flue sizes can be regulated so that the proper volume of air is at all times maintained and the entire dryer is moving in unison, so as to give a definite, constant and uniform production of equally dried ware at all hours thru the day.

Stratton Meter Very Simple

The Stratton air-flow meter may be attached to an air duct delivering air at any temperature in any convenient position and location. The instrument itself is extremely simple, there are no liquid tubes or delicate connections. Thus it lends itself to the hard usage on clay products plants.

The Stratton air-flow meter is a mechanical interpretation of the physical principles of the Pitot tube. A small vane when in the air duct is deflected as the air passes; the higher the velocity the more deflection. A cam and calibrated spring resists the deflection of the vane and by this means the resistance increases as the square of the velocity. The deflections are measured by an indicator and dial.

Any one can install and adjust this instrument. It will accurately indicate the volume of air passing the point where it is installed indefinitely, and should prove of considerable interest to clay product manufacturers who are at this time striving to cut costs and eliminate wastes. There are also possibilities of using this apparatus successfully in the preliminary stages of burning—especially during water-smoking when proper draft is very important.

What Research Means to the Clay Man

Work Now Going on Under Direction of Highly Capable Men—Results Already Achieved—Will Provide Weapons Against Competitors

By Maurce B. Greenough

Secretary, National Paving Brick Manufacturers Association

BEGINNING LAST JULY and continuing monthly since then the common, face and paving brick, and the hollow building tile associations have paid installments into the joint research fund which aggregated on January 1, $5,624.93. Additional revenue from interest brought the total receipts of the fund to $5,633.03. During the same six months the disbursements from the fund for all purposes amounted to $2,857.66, leaving a balance in the cash reserve of $2,775.37 In detail the expenditures have been made for these purposes:

Bureau of Mines Salaries	$1,349.94
Bureau of Standards Salaries	513.57
Bureau of Mines per Diem and Expense	335.77
Bureau of Standards Equipment	150.00
Reports	19.65
Stationery and Supplies	78.05
Traveling Expense (Technical Committee)	110.68
Advance Bachman Revolving Fund	300.00
Total	$2,857.66

By the terms of the arrangement entered into when research work was organized by the cooperation of the four national associations, the American Ceramic Society and the federal government, $10,000 was to be paid into the joint research fund by July 1, 1922, by the four associations, and not less than the same amount during the following year which would end on July 1, 1923.

Division of Funds

Reverting a moment to the original arrangement entered into last Spring, it was agreed by the Joint Committee that $7,500 of the first year's $10,000 should be apportioned to the use of the Bureau of Mines and the remaining $2,500 to the Bureau of Standards. On the basis of the first six months' operations as shown by the foregoing statement the Bureau of Mines therefore could have used up to $3,750 whereas in all they have used but $1,985.71. Out of an allowance of $1,250 for the six months, the Bureau of Standards has exhausted but $663.57. A total of $208.38 has been spent for stationery, supplies, reports and the traveling members of the Technical Committee in attendance upon Joint Committee meetings in cases where such expense was not otherwise provided for.

Assembling these figures we have an interesting statement of progress. Total revenue for the first six months has been $5,633.03, less overhead costs of $208.38 would leave available for field work, $5,424.65, divided by agreement as follows:

To the Bureau of Mines	$4,068.49
To the Bureau of Standards	1,356.16
Total	$5,424.65

Deducting actual disbursements charged to each of the Bureaus there remains unexpended at the end of the first six months:

To the credit of the Bureau of Mines	$2,082.78
To the credit of the Bureau of Standards	692.59
Checking bank balance at	$2,775.37

Field Work Progressing Rapidly

Today, the field work is swinging into its real stride in the studies being made of actual burning methods. Some changes in the method of handling the situation already approved by the committee are being carried into effect. You will recall that the Joint Committee undertook to pay the salaries, per diem and traveling expense of three men on the Bureau of Mines staff. This we have done. But as the work progressed and the field of the study was defined it was found that numerous long jumps would have to be made from plant to plant, involving not only traveling expense for the personnel, but loss of time as well. Equipment would have to be crated and uncrated. The question of suitable living quarters for the personnel was very much of a problem. So that when the laboratory car of the Bureau of Mines was made available for the use of our work, it seemed the wise step to make use of it as quickly as possible. Particularly so when the cost of operating the car, including the making of suitable arrangements for provisioning it, will not overstep limits already established as wise in the matter of expense. The field organization today is well-housed, and along with these facilities, the use of the laboratory accessible to the location of the studies they are making. No time beyond time of transportation is lost in moving from one location to another. Altogether the use of this car greatly increases the efficiency of the field work.

Excellent Technical Direction

There are few industries as well provided with technical direction in its researches as our own is at the moment and the encouraging element in the whole situation is that the service of the Technical Committee is available to all the industry and not any single group. Above all other features which distinguish this research is the cooperation of the federal government thru the Bureau of Mines and the Bureau of Standards and other cooperating agencies like the University of Illinois made available thru the American Ceramic Society. For a combination of factors all working to the same end as efficiently as this combination is working, one would have to seek far.

Now let us give some consideration to the significance of this movement in which we are engaged. We are dealing with a mighty force. We have called to our aid the assistance of directed intelligence in solving problems which are common to all of the participating groups. We may justly

(Continued on page 482)

Editor's Note—From a paper read at the Common Brick Manufacturers' Association Convention at St. Louis, January 30.

The Building Situation

BUILDING OPERATIONS not only are on the increase in the Boston section of New England, but thruout this district there is a noticeable advancement in construction. With Boston territory contracts averaging close to $1,500,000 a week, February building in the New England states totaled over $15,000,000, or more than double the figures for a year ago. Business structures are taking the lead over residential work, representing about one-half of the total; apartments and dwellings run slightly more than a quarter of the aggregate, with industrial buildings only about five per cent.

Ordinary common brick in the Boston market has receded firmly to the $16 level, delivered, and the bulk of sales are at this figure; $18 is asked for New York stock, as compared with a figure of $25 to $27 a year ago. Selected New England common is priced at $21, while water-struck material, kiln run, is quoted at $30, on the job. Selected stock of the last noted character is $32 at the yards of the New England Brick Co. and other prominent dealers. Fire brick maintains at $60 and $70, according to stock, while fire clay is retailed at $25 a ton.

Sewer pipe in carload lots is selling at $108 a thousand feet for three inch material; $162 for five inch; $252 for eight inch; and $486 for 12 inch; terra cotta partition blocks, 4x12 inch are $140 a thousand, delivered, and 8x12 inch, $240.

At Providence

Common brick dealers at Providence, R. I., have a price range from $20 to $25, delivered, according to stock. Salmon varieties are around $16. Fire brick is selling locally at $70 to $90, for standard nine inch, No. 1 clay. Vitrified paving blocks, are quoted at $52 on the job.

Sewer pipe, single strength is 40 per cent. off list, and double strength material, 30. Partition tile, 4x12 inch holds at $160 a thousand, and 8x12 inch, at $270. Flue lining varies from 36 cents to $1.05 a foot, according to size of material.

Heavy Increase at New York

Construction operations at New York continue to gain at a heavy rate. In the five boroughs, contracts to an amount of $37,719,000 were placed during February, an increase of over 12 per cent., as compared with the previous month, and about 2½ times the totals for the same month of a year ago. Residential work tops the list with 73 per cent. of the aggregate, or $27,748, a slight advance over the January figures. Business buildings showed an increase of about 75 per cent. for the preceding month, standing at $7,750,000, as the February record.

In Manhattan Borough in February, work to an amount of $10,316,100 was placed under contract, showing a comparison with $8,660,000 in January. Tenement houses formed the primary feature of operations, representing an aggregate of $4,275,000. Queensborough in this same month produced $9,739,000 in new building work, or about four times the total for February, 1921. The figures are 25 per cent. in excess of those for January last, when previous high records of the local building department were broken.

Big Demand for Brick

The past fortnight has brought about an increased demand for common brick, to the extent of practically absorbing entire stocks of a number of dealers. The call on the wholesale market has been heavy, and the available supply completely exhausted. The Hudson River is again open to traffic as far north as Newburgh, and about 20 barge loads have been dispatched to the New York market from local yards. It is said that at least 15 of these will find instant sale and distribution.

Hudson River common stands at $17 a thousand in cargo lots, alongside dock, to dealers at New York, with local yards asking $20.50 for the material delivered. Raritan brick, and also stocks from South River, N. J., are quoted at $17, wholesale.

The brick plants in the Hudson River section are making ready for the season run, and a good rate of output, at least during the spring months, is planned. Cleaning up for production is under way at a number of plants, with repairs and improvements in equipment. There is practically no yard in the district burdened with any heavy surplus but the supply is ample for the early spring weeks.

Contractors at New York are purchasing hollow building tile in carload lots at the following figures: $111 a thousand, 4x12x12 inch; $166 a thousand, 6x12x12 inch; and $208 for 8x12x12 inch size. These quotations are just about one-half of those of a year ago at this time.

New Jersey Forges Ahead

Heavy gains in building operations are recorded from all parts of New Jersey. At Newark, February work totaled $2,003,084, an advance of $928,000, as compared with the same month in 1921. The January and February operations in this city aggregate $3,029,363, as against $1,450,500 in the same period of last year. The number of dwellings is more than double the figures for a year ago, with brick structures a dominating feature of operations.

Common brick at Newark is priced at $20 and $21, delivered, with Hackensack and Raritan River stocks forming the bulk of current distribution. Paterson is selling at $20 a thousand, while Morristown and other points in this section of Northern New Jersey are pricing the material at $22. Trenton holds to $18, delivered, with $15.75 and $16 at the kiln.

The seasonal yards at Hackensack, Trenton, and in South Jersey are preparing to start as early as possible with production, and plants are being made ready with early April operations in view.

Face brick is selling from $40 to $55 in the different New Jersey centers, depending upon quality and color. Fire brick ranges from $75 to $80, and fire clay holds at $17 to $19 a ton. Hollow tile in the popular sizes is from $150 to $250 a thousand.

High Records at Philadelphia

Housing construction is bringing about important increases in building totals at Philadelphia, and a heavier call for common brick for dwellings is shown from day to day. February construction showed a gain of $4,036,265, as compared with the same month of last year. The increase for the first two months of 1922 is $7,323,145, or three times more than the estimated cost of new structures in January and February, 1921. The February, 1922, total was $5,381,435, covering 1,242 operations. Of this amount, $2,291,260 was used for new dwellings.

Good hard common brick is selling at $16 a thousand in the wholesale market at Philadelphia, with a price of $17.50 and upwards, delivered, according to length of haul. Fire brick is priced at $75 and $80 in the local market; paving brick at $42, four inch size, and face brick at $40 to $50.

Wilmington Progresses

A leading producer of burned clay products at Philadelphia says that January and February business was considerably larger than for any two months of the year past. Prices average about one-third lower on the different lines as compared with the same time in 1921.

(*Continued on page* 484)

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

CONDITIONS IN THE FELDSPAR INDUSTRY

ONE of the chief reasons for the lack of progress in the feldspar industry has been the want of cooperation between producers and the mistaken policy of secrecy which has been so common in the past. There are no mysteries in the mining and milling of feldspar. The problems incident to grinding it are not unique, for similar ones are constantly being encountered and solved in other industries. Free exchange of information regarding not only methods and equipment but plant capacities, markets, grades, production and so on, would greatly benefit each producer and the industry as a whole. As it is, few feldspar producers are well informed of the total number of feldspar mines, the number and location of grinding mills, the total milling capacity of the country, the scope of present markets, or of possible new markets. Of course, there are some producers who are well informed on these points, but on the whole, lack of this sort of information is responsible for the building of new mills which can never be profitable, for overproduction in dull times, and for useless price cutting to a point where no profit is possible.

It is probable that no feldspar company exists today which uses methods or equipment so efficient or so little known that anything is gained by secrecy. The great metal-mining industries have passed thru the stage of secrecy, and discarded it as being directly opposed to efficiency and development.

Small Size of Feldspar Deposits

Inefficiencies in feldspar mining cannot always be easily remedied. Unfortunately, as already stated, most feldspar deposits are not large. In many districts the deposits are small, irregular, scattered bodies situated in rugged areas distant from a railway or river, and with steep, sometimes impassable, roads. Under such conditions, the owners of a deposit often cannot afford to maintain an efficient technical or business organization, or to install expensive machinery and "ground hogging" methods may really be the most economical. There is, however, a possible solution to this problem. If the owners of a number of small deposits in a rather limited area, such as in some of the North Carolina districts, would get together and consolidate their holdings into one company, a unit might be formed strong enough to justify the investment of capital ample for economical operation. Work could then be concentrated on the best deposits, modern machinery installed, and a competent manager and technical force employed. A few such units could easily supply the total feldspar demand of the country more cheaply and efficiently than is done today.

Many of the best deposits of feldspar close to lines of transportation have been exhausted, with the result that poorer grades has become more expensive. As a matter of fact, large deposits of strictly number one grade in the East are scarce, altho by the use of proper methods and equipment, number one feldspar can be produced from some of the lower grade deposits. However, number one feldspar must inevitably command a higher price than it has in the past. As the most easily accessible deposits of number two feldspar become exhausted, the consumers must be prepared to pay higher prices for this grade also.

It has been stated by some that number one feldspar can not now be had in commercial quantities, and that even number two grade, free from objectionable impurities, will not be available in the near future. This is not true, for our available supplies of feldspar, even in the East, are still very large; but better and more expensive methods of mining and preparation must be used and longer hauls will be necessary. When prices attain a certain level, it will be possible to mine and ship feldspar from regions now comparatively inaccessible in Canada and the western states.

Lack of Knowledge of Ceramic Properties

The ceramic arts, until recently, have not been practiced on an exact scientific basis, and dependence has been placed largely on rule-of-thumb methods. At present, however, the best producers of ceramic products employ ceramic chemists who have scientific knowledge of the properties of the raw materials that they use. But there are still many "practical potters" who should be more exactly informed as to the properties and behavior of these materials. To this class of potters, feldspar is simply feldspar, and the need for refinements in grinding or purity is not felt. Feldspar producers assert that many customers do not appreciate good quality, and will not pay a price sufficient to permit producing high-grade feldspar. While this is not universally true, it is an unfortunate fact that some potters buy on the basis of price alone. This results in the production of low-grade, non-uniform feldspar and in excessive losses in the pottery.

Some "practical potters" go to the other extreme, and insist on buying their feldspar year after year from the same producer and pay excessive freight charges, when some other producer much nearer the plant could supply similar material at a much lower delivery cost. This policy results in much cross-hauling with no compensating gains. Few feldspar mills produce exactly the same quality of material from the same mines for many years. The brand or grade names may remain the same, but the feldspar changes, due to exhaustion of deposits or to natural variations in the same deposit.

Excessive Grinding Capacity

At present there are more than 25 feldspar grinding mills in the United States with a total aggregate capacity in excess of 300,000 tons per year. Allowing for a normal rate of increase over pre-war consumption, we should now have an average consumption of about 150,000 tons per year. Thus, the producing capacity is at least double the consuming capacity. This leads to excessive competition in normal times, price-cutting in order to obtain business, lowering of standards of quality in order to cut costs, and part-time operation. Much of this surplus capacity was built up during the past few years of apparent abnormal demand.

Comparatively few consumers buy their feldspar on specification and no uniform specification exists, altho from time to time, such a system has been suggested. Most consumers make use of a few simple, practical tests, but these are not uniform and their value, as far as giving accurate, dependable information is concerned, has been seriously questioned. Also, no clear definitions of feldspar grades exist. Number one grade to one potter means practically pure feldspar of the grade known as dental spar, while to another it means a material reasonably free from objectionable impurities, such as tourmaline and garnet, but containing as high as 25 per cent. of free quartz. Grade names or number, therefore, mean little and consequently price quotations based on such grading are not comparable. Since the feldspar producers have no uniform standards to meet, they cannot be held entirely responsible for unsatisfactory grades of product.

In order to improve this situation producers and consumers should cooperate in setting up uniform specifications and definitions of grades, and in devising simple standard tests, so that the producer can keep an accurate check on his products.

Suggestions for Improvement

The whole feldspar situation outlined above can and doubtless will be improved, but unfortunately some of the remedies are such that many of the present producers can not readily apply them. The reason for this is that unwise investments in deposits, equipment, and improperly located mills cannot easily be liquidated, and the additional capital needed would bring the total capitalization up to a point where an adequate return on the investment could not be derived from a reasonable margin of profit per ton. In other words, much of the present equipment would have to be scrapped at a total loss, and many companies are not financially able to replace it with modern, efficient equipment. Some of the possible remedies are listed below:

(1) Gradual replacement of all the present mills by a small number of new grinding mills designed by competent engineers and equipped with the latest and most efficient machinery.

(2) Ownership or control of sufficient deposits of high-grade feldspar by the grinding companies to supply their entire requirements.

(3) Setting up of standard grades and specifications for feldspar for all uses.

(4) Instituting of centralized chemical and engineering control over all mining and milling operations, so that an absolute check on quality may be had at all times.

(5) Close cooperation among producers and between producers and consumers in order to promote greater knowledge and confidence and a more intelligent production and utilization of feldspar.

mprovements Must Come Soon

Of these remedies, the first, second, and fourth are the most mportant and afford the key to the solution of the problem. It s not to be expected that these changes can be effected in a hort time, or that they all will ever be completely carried out. ut the temper of the consumers today is such that most of the nprovements must come soon. If the present producers do not et together and attack the problem effectively, new companies re certain to enter the field and either absorb most of the business or force the present producers to improvement in self defense. In fact, that is the normal development to be expected, nd there are already indications that several new and efficient ompanies are about to enter the field.

A possible danger in the effecting of the proposed improvements is that many of the companies will decide independently that they will rebuild and enlarge their old mills, leading to a needless duplication of equipment and still larger over production, rather than combining to replace several of the old mills in a district with one of modern type. The carrying out of only a part of the necessary remedies would result in a further addition to our present excess capacity with no consequent benefits.

Should Consolidate Into Groups

As one means of obviating these dangers it is suggested that all present feldspar producers, both miners and grinders, get together in a conference and formulate definite plans for the improvement of their industry. Such a meeting might result in the formation of a strong trade association, or better, in actual consolidation into several groupings of present companies, with capital and connections sufficient to insure a maximum of prosperity for the feldspar industry. It is suggested that present and prospective feldspar producers keep the Bureau of Mines informed as to their plans, particularly for alterations and new plant construction. It has been found in other industries that in this way unwise and inefficient developments have sometimes been avoided.

* * *

STONEWARE AT INDUSTRIAL EXHIBIT

In the Colorado Industrial Exposition and Prosperity Carnival, held in the Denver, Colo., municipal auditorium, week of February 20-25, many citizens are made aware of the fact that they have within a few minutes' car ride of their home a pottery works that manufactures every needed piece of pottery for the home.

The Western Pottery Co., of Denver, had within its booth jugs, vases, flower pots, jars, and so forth, and all of it home made, and they are handing out a booklet, captioned, "Stoneware for all Purposes." The booklet contains excellent arguments for the use of stoneware. Following is an excerpt:

"It enables the housewife to effect big savings in foodstuffs. Stoneware keeps moisture in or out as desired. It protects foodstuffs against light exposure, which often affects quality. It resists heat and cold alike. It is absolutely sanitary and easily cleaned. It never wears out. It never burns. It cannot come apart."

"Bread, cookies, cakes, pastry, keep fresh longer in stoneware jars. Fruits and vegetables keep firmer and fresher. Salt, spices, tea, and coffee, flour, cereals, milk, butter and cheese keep better. Preserves, jams, and jellies are more tasty and tempting in appearance if kept in special wax-sealed or self-sealing jars. All sizes of stoneware containers are practically indestructible. Meats, eggs, vegetables, fruits, berries and all preserves keep better in stoneware than in any other container. Stoneware is the best container for cider and vinegar."

* * *

POTTERIES WORKING ALMOST NORMAL

Generalware potteries in the East Liverpool district are working approximately 85 per cent. capacity. This record is deducted from the volume of gas consumed for kiln firing, and from the record of oil and coal fed kilns. Gas-fired kilns are now averaging from 35 to 44 kilns per diem.

It is quite impossible for this district at any time to work 100 per cent., for there are always particular departments in different plants "off duty" for a day or so. When the East Liverpool district is marketing a production of 90 per cent. of plant capacity, a normal situation is mighty close to hand. Therefore, the district at this time is hovering rather near that point.

There are some plants in the district that are working to capacity, while there are a possible two or three that are operating from 50 per cent. upward.

Here and there firms which never before operated dinnerware departments are installing these lines, and this is creating a new outlet for American dinnerware. Placing new open stock patterns in such departments means a lot of steady business for pottery manufacturers.

It is confidently believed that sooner or later the old time "scheme" trade will start to buy, and here again will open another shipping outlet. The "scheme" trade in the past was always a big buyer out of the East Liverpool district, and when the tea and coffee houses start to order as they did in the years that have passed, the demand for dinnerware will be more active than ever.

* * *

EXHIBIT OLD AND NEW AMERICAN POTTERY

An interesting and comprehensive American pottery display, including wares made by the American Indians up to pottery of the present day, was on exhibition March 7-9 in Montgomery, Ala., under the direction of the Magazine Club of that city. This club, which is a member of the Alabama Federation of Women's Clubs, is studying pottery from all its angles, and topics such as materials and processes, traditional stories and early history, good designs for table china and other subjects were discussed by members at the exhibit.

* * *

TENNESSEE MINES AGAIN OPERATING

The clay mines in Henry County, Tenn., are again being worked after a partial shutdown lasting for almost a year. The Spinks Clay Co. is now shipping clay from the Jernigan pit in Paris, Tenn., and from its mines at Whitlock. The Mandle Clay Co. at Puryear is also increasing its output. This clay is shipped to the eastern states, especially Pennsylvania, to be manufactured into table ware.

* * *

CROCKERY AND FIRE CLAY IN NORTH CAROLINA

Recent tests made on samples of clay taken from a large deposit located between Hamlet and Rockingham, N. C., show it to be suitable for the manufacture of crockery, according to Field Surveyor Mooney, assistant in geology of the University of North Carolina. The same clay is also the finest for fire brick that Mr. Mooney has encountered in his many trips of exploration thruout the state, he declares. A $100,000 crockery plant would find enough raw material in this deposit for 50 years, Mr. Mooney claims, and while crockery manufacture is regarded as something of a freak in North Carolina, attempts will be made to interest some manufacturer of such ware in developing the project.

* * *

EDUCATING PUBLIC ON POTTERY MAKING

The Kinney & Levan Co., Cleveland, Ohio, is conducting a course calculated to instruct the public in the utility and comparative worth of pottery.

Plate making, from the dripping wet ball of clay, thru the spinning, shaping and drying, is on view. Other processes in the manufacture of household pottery are also being illustrated.

* * *

EXHIBIT FAMOUS SPANISH POTTER'S WORK

A collection of pottery made by Daniel Zuloaga, nephew of the Spanish painter, Zuloaga, was exhibited March 10 to 24 at Greenwich House, New York City. Professor Wendell T. Bush, of Columbia University, and his wife brought the pottery from Spain, where they visited the maker. Zuloaga has been given an old Romanesque church by the citizens of Segovia in recognition of his artistry, and it is in a nave of the old church, long unused for religious purposes, where he has his kiln and produces the bright colored placques and tiles, graceful vases and jars, and other objects of art which are internationally famous.

Professor and Mrs. Bush have a second consignment of the pottery on the way, and this collection will be presented to Greenwich House.

* * *

MANY ORDERS ON HAND

The Hartford (Conn.) Faience Co. reports orders for an unusually large amount of porcelain, architectural and faience tile for early spring delivery and is considering some enlargements to its plant to handle the increased business altho no definite plans have yet been prepared. The concern was organized in 1894 and now has ten large kilns, its plant occupies about 50,000 square feet of floor space and about 300 hands are employed. It is said to be the only representative of the porcelain industry in New England. Clarence E. Whitney is president and Fred L. Bishop is secretary, treasurer and general manager, with G. D. Rankin as factory manager and M. I. Rankin as superintendent.

* * *

FINDS HIGH GRADE KAOLIN IN TEXAS

Dr. E. P. Schoch, head of the department of chemistry at the University of Texas, has recently been making an investigation of the kaolin deposits near Leakey, Real County. Dr. Schoch reports that a layer of kaolin in this region occurs at a depth of ten to 100 feet below the surface, and is relatively easy of access. It is stated that this Texas kaolin compares favorably with that found in the Appalachian region, and will be particularly valuable in the manufacture of whiteware. The University of Texas has been asked to refine about 2,000 pounds of the material for further tests, and this work will be commenced upon the completion of a tank now being constructed at the university for this purpose.

* * *

ORGANIZE DELAWARE COMPANY

The Progressive Clay Co., a Delaware firm, has been organized for the manufacture of earthenware. The capital is listed at $50,000. J. J. Zimmerman, 47 West 24th Street, New York City, represents the company.

* * *

A report states that a $375,000 pottery plant will soon start operations at Dorina, Cal.

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SELL FLINT AND FELDSPAR PLANT

The property of the Maryland Flint & Feldspar Co., Havre de Grace, Md., has been acquired by Norman Marritt and associates. The site is in the vicinity of Kalmia, near Havre de Grace, and the new owners plan for extensive operations.

* * *

GOLDING SONS MINE ALL TYPES OF CLAYS

In an item appearing in a recent issue of Brick and Clay Record, and commenting upon the activities of the Golding Sons Co. of Butler, Ga., it was stated that this company is a miner of sagger clay only. The company has written to tell us that sagger clay which is mined is only one of a variety of grades mined by Golding Sons Co., and the firm is doing the largest business in the mining of the very best grade of Georgia china clay. The plant mentioned in the item is merely a branch of the Golding Sons Co.'s line of business, and this company is the largest as well as the oldest company furnishing everything essential to the manufacture of chinaware, sanitary ware and porcelain in the United States.

* * *

OFFICERS AND EMPLOYES MEET TOGETHER

An annual meeting of officers and employes of the Woodbridge (N. J.) Ceramic Co., manufacturer of sanitary ware, was held at the Odd Fellows' Hall, Perth Amboy, N. J., March 3. Peter Schendorf, vice-president, presided, and made an interesting address. Other talks were made by William Prall, secretary; John Kreger, general manager and chemist, and Herbert E. Rose of the sales department. Following, there was an entertaining musical and literary program. The company was organized in 1917, and its products have met with wide favor and demand.

* * *

WILL BUILD STONEWARE PLANT

The Standard Stoneware Co. of Chester, Wash., about five miles southeast of Spokane, will build a $20,000 pottery and stoneware finishing plant this spring. At the present time the company is operating a small plant with two kilns, and is turning out flower pots, jardinieres and stoneware. Seven men are employed. Charles Stormes, manager, states that the new building will occupy a site about 80 by 110 feet and will employ 30 men. It will be completely equipped with modern machinery. The Ford plan of operation will be followed, in which every employe is a stockholder in the company.

* * *

MADDOCK DOING GOOD BUSINESS

The Thos. Maddock Sons Co., Trenton, N. J., manufacturers of hotel ware, is maintaining capacity production and has orders on hand to insure this rate of output for some time to come. "Business is brisk," is the way that Charles A. May, president of the company, puts it.

* * *

DOUBLES CAPACITY OF SANITARY WARE PLANT

Carl H. Zwermann, president and general manager of the Zwermann Co., Robinson, Ill., writes as follows:

"We have just completed a warehouse 64x64 feet and an addition to our plant 64x105 feet. This increased our output by about one-third. We also have let the contract for an additional building 75x300 feet. This addition is going to double our present output. The contract for the building has been let to a local contractor, and the contract for the tunnel kiln to the Russell Engineering Co. of St. Louis, who also built the tunnel kiln we are now using. Work on the new building has been started, and we expect to have the new plant in operation about July."

* * *

WILL BUILD NEW TUNNEL KILN

The American Encaustic Tiling Co. of Zanesville, Ohio, has recently signed the contract for a 330-foot Harrop continuous kiln for the firing of their bisque floor and wall tile. This company already has two tunnel kilns in operation. The new kiln is to be designed for the firing of natural gas, fuel oil and coal on mechanical stokers, and is to have a capacity equivalent to the burning off of 11 16-foot periodic kilns per week. Construction work will be started as soon as the plans can be prepared.

* * *

MANTEL AND TILE COMPANY ORGANIZES

A charter has been granted to the Dormont (Pa.) Mantel & Tile Co., with a capital of $5,000. The incorporators are: George Lang, 1447 Alabama Avenue, Dormont; Elizie W. Gibson, 526 Mifflin Avenue, Wilkinsburg; E. K. Lang, 1447 Alabama Avenue, Dormont.

* * *

TO BUILD NEW WAREHOUSE

The Sebring (Ohio) Pottery Co. has contracted for the erection of a 75 by 135 foot brick structure to be used as a warehouse. The building will have a ground floor space of 10,000 feet. Work will begin at an early date.

* * *

HOMER KNOWLES' PLANT PROGRESSING

Homer Knowles, president of the Homer Knowles Pottery Co., Santa Clara, Cal., was a recent business visitor in Chicago. Mr. Knowles states that machinery is arriving at his plant and that the sagger department has been already started. 31 people from East Liverpool, he says, are now in Santa Clara.

* * *

SMITH & PHILLIPS ELECTS OFFICERS

At the annual meeting of the stockholders of the Smith & Phillips China Co., East Liverpool, recently, the following officers were elected: President, V. Q. Hickman, Pittsburg; vice-president and general manager, J. T. Smith; secretary and treasurer, P. V. Robinson.

The board of directors consists of Mr. Smith, Mr. Robinson, and Mr. Hickman, and includes William H. Phillips, and Mrs. B. W. Robinson, of Akron.

* * *

The Kittaning (Pa.) Ceramics Co. has filed a notice of increase of capital stock from $80,000 to $100,000.

* * *

MAY BUILD NEW PLANT

The Syracuse China Co., 711 East Division Street, Syracuse, N. Y., is considering plans for the erection of a new pottery at Amboy, near Syracuse. The company has a site for the plant.

* * *

TO MAKE PLANT IMPROVEMENTS

The United States Encaustic Tile Works, Indianapolis, Ind., has filed plans for improvements in its plant building at 359 West Sixteenth Street.

* * *

DECLARE SEVEN PER CENT. DIVIDEND

A seven per cent. dividend on preferred stock of the Inland Empire Pottery Co., Spokane, Wash., was authorized for February 1 by trustees of the company at the annual meeting held in January. George E. Stone was elected president, E. Rosenberg, vice-president, and Alfred H. Wind, treasurer.

* * *

GETS ORDER FOR 250,000 SPARK PLUGS

The Bethlehem (Pa.) Spark Plug Co. is arranging for immediate increased production at its plant. A contract has been secured from the Packard Motor Car Co., Detroit, Mich., for spark plug requirements for a year, the order calling for about 250,000 plugs. This will insure capacity at the plant for some time to come.

* * *

D. W. McCARTHY DIES

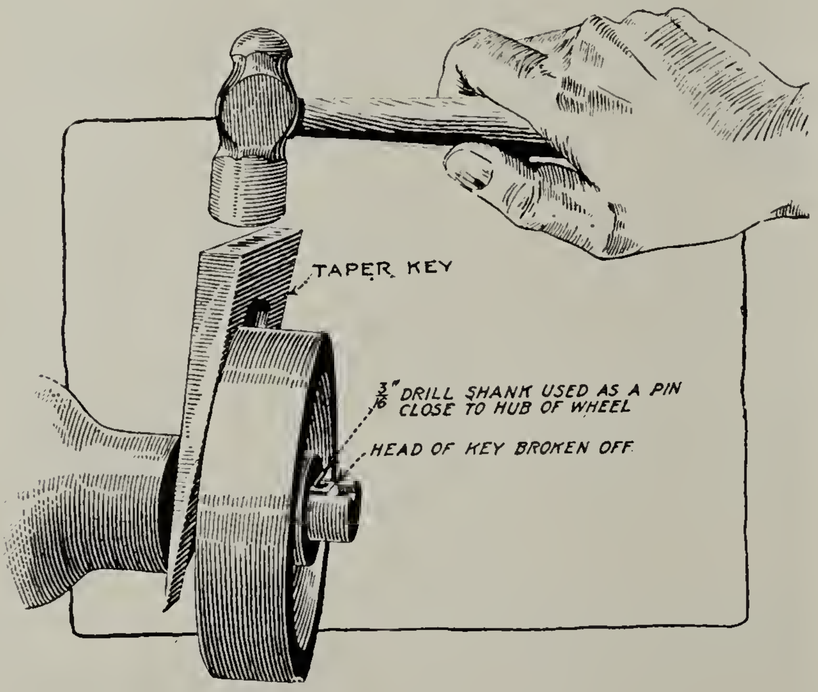
Daniel W. McCarthy, retired pottery manufacturer, died March 4, in a Cincinnati, Ohio, hospital. After retiring as a pottery manufacturer some years ago, he represented an eastern building concern as Cincinnati manager. He is survived by a widow, two sons and one daughter.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

REMOVING KEY FROM MOTOR SHAFT

The illustration shows a kink that may be used when removing a pulley fitted with a taper key on which there is no head. The pulley is driven on the shaft as far as possible, and then a small hole (say $\frac{3}{16}$-in.) is drilled with a breast drill in the end of the key close to the hub of the pulley. A piece of round steel is put in the hole and the pulley is forced off with the split wedge as shown. All that is required of the pin in the drilled hole is to overcome the friction between the key and the shaft, which is not great if the pulley is not again driven onto the taper.—*B. C. Malick, Lima, Ohio, in "Power."*



Expedient for Removing a Tight Pulley.

⁂

ECONOMICAL LONG DISTANCE CONVEYING

The clay products manufacturer is often confronted by the problem of utilizing raw materials not advantageously located. Sometimes the raw material may be far from a railroad or it may be miles from an industrial center or town. This disadvantage can be overcome by the use of an aerial tramway, which has found adoption in several plants in the clay industry.

It is reported that a cement plant in Montana which was built in 1918 has used the aerial tramway with great satisfaction. The factory, modern in every respect, is located nine miles from Lewistown on the Great Northern and Milwaukee Railroads, and the property supplies all raw material necessary for the manufacture of Portland cement: that is, limestone, shale and gypsum. With the exception of the limestone these materials are advantageously located, the shale and gypsum being within 100 yards of the crushing plant.

The limestone deposit, being on a mountain top some 2½ miles north of the plant, presented a more difficult transportation problem. From the lime rock quarry to the lower terminal of the plant it is a distance of 12,500 feet by tramway, over rough, steep country, with a variance of 1,650 feet. The tramway has a capacity of 50 tons per hour. The workmen ride to and from the quarry in the buckets in safety, and any supplies needed are freighted up in the same manner.

The total cost of carrying the rock over the tramway for the two miles from the pit to the plant averages 14 cents per ton. This cost was obtained during a period whe the operation was only intermittent, and it is expected tha this cost can be reduced.

Long Distance Conveyor Which Proved Practical and Economical—Taken from Cement, Mill & Quarry.

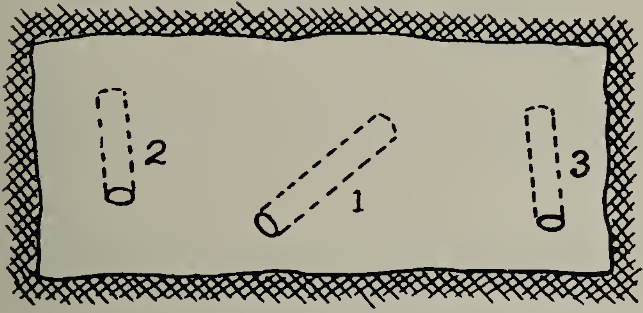
⁂

UNDERGROUND FLINT CLAY MINING

The underground mining of siliceous fire clays is practice much as is coal mining, by use of the pillar and roon method. The entry being established, the rooms should b only as wide as the nature of the roof will stand. The pil lars should be of a width in keeping with the weight the must bear.

Flint clays occur in a variety of ways. They may overli softer clay or may be covered with more or less coal. Whe the height of the coal is sufficient to make the operation pa it should be mined off first. If not, care must be taken th the coal does not become mixed with the clay. When th coal is mined off for some distance, the clay can be lifte by slab shots loaded in deep and nearly flat holes. Th method has the additional advantages of getting the coal ar waste out of the way before the clay is disturbed and r duces the danger of mixing objectionable matter with tl clay.

When the soft clay is of sufficient height, and the co not of a quality to mine, the soft material should first mined out. When this is done, the hard clay is shot dov by means of flat holes. For "breaking in" or "out" shots in opening up a header or breast, various methods are employed. The best advantage should always be taken of all slips or faults. Many prefer a single breaking in shot, while some, especially where the clay is hard to break, prefer to load two holes pointing together instead of the single shot at one, as illustrated in the sketch. For some clays decided variations from these methods are required to suit the peculiarity of the ground.



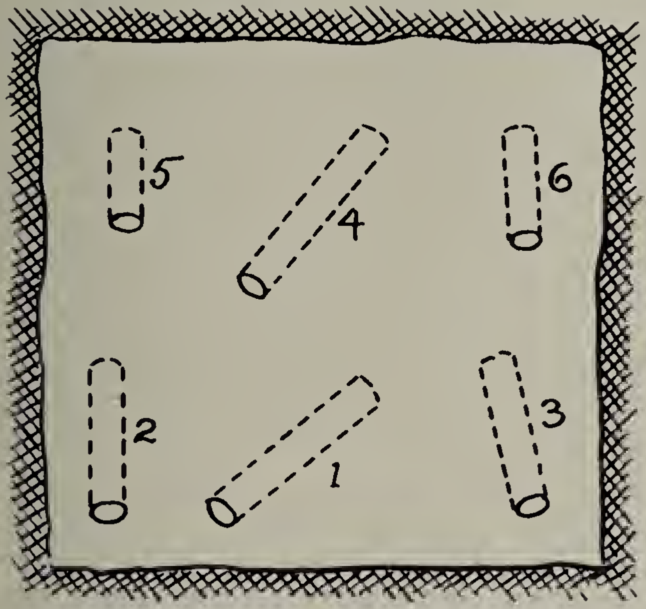
Methods of Drilling Holes for Shooting Flint Clays.

The rib and slab shots are usually drilled to the full depth of the "out" or "break in" and carry a burden of about three to four feet.

The parting at top and bottom is usually so good that lifters and back shots are required.

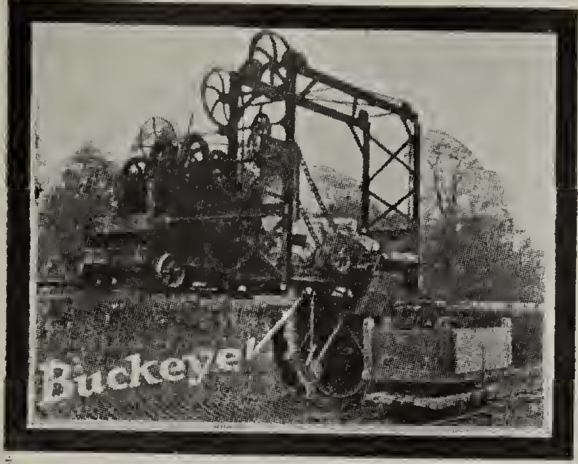
The shooting of flint clay requires much care, as it is likely to be broken so fine that the loss as waste reduces the output of the mine.

Formerly all flint clay was mined with blasting powder, but this is being replaced by 40 per cent. ammonia dynamite. The use of electric blasting caps is strongly recommended as they decrease danger; if the shot fails, there is no hang-fire, and the miner can return to the working face to locate the trouble. Failing to find the trouble, he can proceed to bore another hole about one foot from the miss-shot, while a miss-shot with fuse may mean losing the day's work, because it is not safe to return on account of hang-fires.



Other Methods Showing How the Charge Can Be Placed When Dynamiting Hard Shale or Clay.

For a reduction of the trouble from fumes, it is recommended that an explosive especially prepared for hard underground work of this character be used, as this breaks down the ground in better lump condition than do quicker-acting explosives.



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LABOR SAVING AURORA S-A MFG. CO. ILLINOIS MACHINERY

Adel Excavator
The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

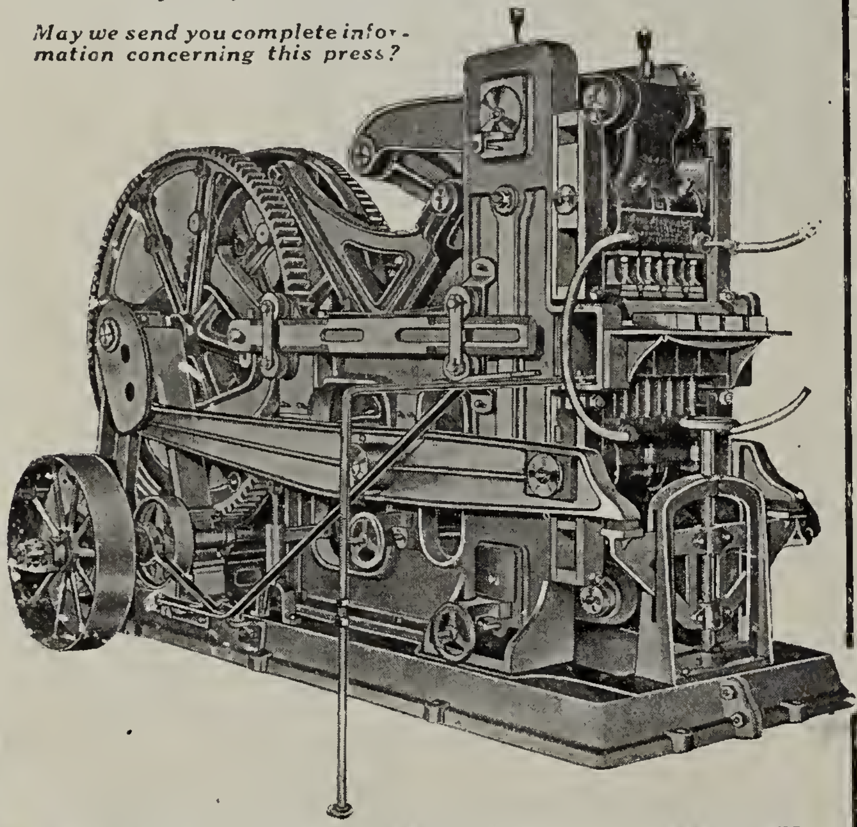
S STEPHENS-ADAMSON MFG. CO. A
AURORA, ILLINOIS

PULVERIZERS MIXERS TRUCKS BARROWS SCREENS MOLD BOXES LINERS

Now is the time to practice true economy.
You can do so by installing the Fernholtz Brick Press.

This press is constructed throughout of extremely high quality material. The mechanical arrangement is such that all parts are easily accessible and repairs, altho few, may be made speedily and at very little cost.

May we send you complete information concerning this press?



FERNHOLTZ BRICK MACHINERY COMPANY
ST. LOUIS, MO.

WHAT METHOD DO YOU USE?

This question when applied to the manufacture of Stiff Mud Ware deserves consideration.

The Modern Way is the Right Way

THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.
Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.
Start now to solve your production problems.

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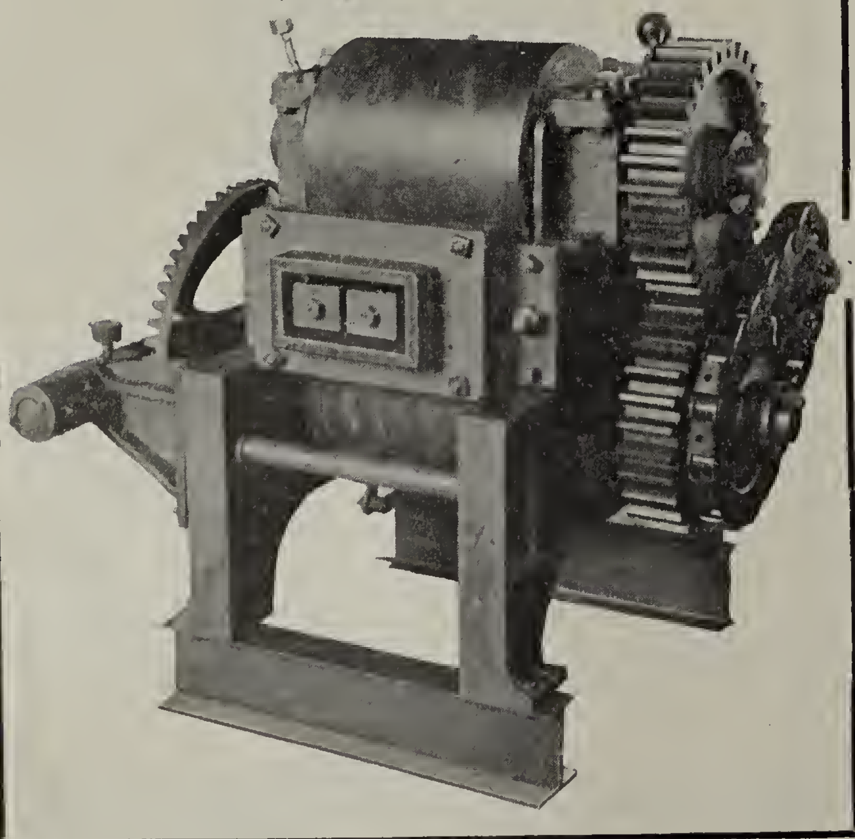
Everything for the Clayworker.



Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

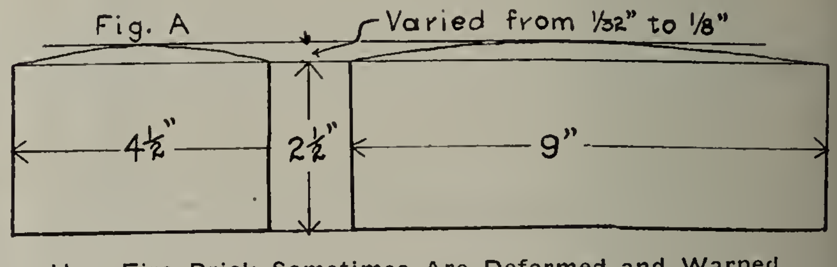
WANTS REMEDY FOR WARPING FIRE BRICK

1,031. *Pennsylvania—Our handmade 9-inch fire clay brick seem to be straight when they come out of the molds and are straight when they come out of the hand press, and they are straight when they are set in the kilns. But after they are burned, we notice a good many have a curve on the 4½-inch side and running lengthwise on the 9-inch way. This fault happens on light and medium burned as well as hard burned brick. We notice it mostly on the hard burned brick.*

We use the same clays and same mix in a coarse ground brick as we do in a fine ground brick, and of the two, we notice the curve shows up most in the fine ground brick.

These handmade brick have sand on the 4½-inch side. This is the side of the mud that is thrown into the wood mold first. This same sanded side is placed down in the repress box. Now the other 4½-inch side is not sanded. We notice the ends draw in on the wet side. What is the cause of this, and what can we do to remedy it?

The attached sketch marked A shows how some of the handmade fire brick made in the St. Louis and Chicago districts warp in the making. The clay for these brick is tempered stiffer than for soft mud brick and softer than for stiff mud auger brick. The clay is thrown into the box, cut off, pressed and offbore in one operation. That is, the pressing is done immediately after the molding, and there are not two operations as in making soft mud brick. The hand presses used are practically the same as those used for repressing soft mud brick. The top or cap side of the brick always caused much trouble with warping. This was always charged to the fact that the surfaces of the clay next to the die and around the edges of the box were covered with sand, and the top or cap surface would have a thin film of oil. It seems that the film of oil affected the drying to such an extent that the center of the brick was often one-eighth of an inch thicker than the corners. A large part of this warpage took place in the drying.



How Fire Brick Sometimes Are Deformed and Warped.

We overcame a large part of this trouble by making the cap with a convex surface instead of a plain surface. At times we also had trouble with the die side of the brick and in those cases made the die convex also. Exaggerated sections of the brick as it came out of the mold under these conditions are shown in sketch B. The surfaces of the brick that caused trouble in warpage were concaved from one-thirty-second to one-eighth of an inch, depending on the amount necessary to produce straight brick. When this process was used, the natural warpage straightened the brick so that when they were burned it was not noticeable at all.

We submitted your problem to R. M. Howe, of the Mellon Institute of Industrial Research, and he offers the following information:

"Without having actually seen the samples described, it would appear that this distortion had taken place either during the water-smoking period or at full heat. The green brick could very easily have been saturated with moisture and softened during the water-smoking period. They are not particularly strong at this temperature, and under sluggish draft conditions could have softened and warped out of shape under the influence of pressure. This warpage might also have taken place at the highest kiln temperatures because of the combined influence of temperature and pressure.

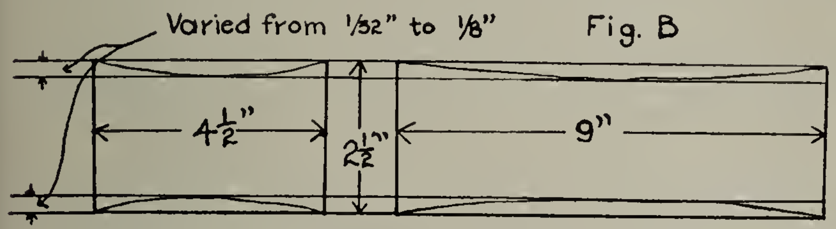


Fig. B

Another Case of Warping Which Occurs in the Molding Process.

"We know by actual experience that fire brick distort at much lower temperatures when heated under pressure. If this is the case a slight change in the method of setting might overcome the difficulty. It is at least worth serious consideration."

R. K. Hursh, of the University of Illinois, has suggested the following which he thinks may be of help to you in solving your problem of warping.

"In the case of fire clay brick which show a curvature in the struck off surface after burning, it would seem to me that this is probably due to the fact that in striking off the mold this face of the brick is made somewhat denser and of finer texture than the other, consequently there is a tendency to shrink toward this side. In drying, this face should be down during the early stage of drying and the curvature would therefore not be so likely to become apparent, but in burning it might develop to a noticeable extent.

"I do not know just what suggestion to make in this connection. It might be worth while to try wire cutting the excess clay from the top of the mold, leaving the surface unfinished except by the subsequent repressing. This might tend to cut the differential shrinkage and help in maintaining straight brick in the burning."

⁂

BURNING TILE AND BRICK TOGETHER

1,032. *Wyoming—Please inform us, if possible, whether or not stiff mud rough texture brick, having three core holes in them, can be burned in the upper half of down-draft kiln, while the lower half is filled with hollow building tile, without injury to the tile while water-smoking the kiln.*

We have burned a kiln of tile with a few brick on top with very good success, but we are a little in doubt if it would be a success if there were a great quantity, because the tile might take on the water-smoking moisture from the brick and perhaps cause them to squash. Our reason for wanting to do it this way is to burn the brick harder than the tile need be.

Would also like to know if it is absolutely necessary to grind material for making sewer pipe in a wet pan, and if so, why? In making sewer pipe on a regular machine is the bell made at the top of the tile or at the bottom? Do you know of any manufacturer of clay machinery who makes an attachment

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You won't have to worry about competition if you treat your clay with

R. H. Precipitated
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You can safely guarantee that your brick will be

Scum-Proof

You can get a higher price and influence architects to specify your product because Efflorescence is prevented absolutely.

But insist on the R. H. BRAND—it's dependable.

We have a complete line of high grade chemicals for the clay industry

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Hollow Ware, Fire-proofing Brick

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You can get real quality and service thru the use of our equipment.

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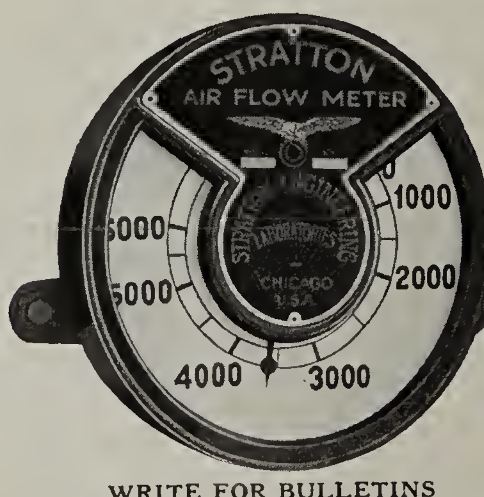
Efficient Clay Drying
Depends on
Correct Air Supply

The STRATTON
AIR FLOW METER
Indicates Air Flow Constantly

This simple device will assist in improving your dryer operation, and maintain it at highest capacity.

LIST PRICE, $115.00



WRITE FOR BULLETINS
STRATTON ENGINEERING LABORATORIES
NEW YORK
90 West Street
CHICAGO
431 S. Dearborn St.
Industrial Plant Efficiency Engineers

for a horizontal drain tile machine whereby sewer pipe can be made?

We do not believe that as a general rule it is practical to burn rough texture stiff mud brick in the upper half of a kiln that has hollow building tile in the bottom. There are several chances for trouble. In the first place, we doubt whether the lower bench of hollow tile will be smooth enough when set in the kiln to make a good foundation for a bench of brick. This is due partly to uneven shrinkage and uneven cutting. A poor floor would also cause trouble in this respect. It would be possible, however, to level up your lower bench with stiff mud or pieces of broken tile so that you could get a practically level bench for the brick.

Another trouble that you would very likely encounter is that the weight of the upper half of the kiln might be too much for the thin walls of the hollow tile to uphold without crushing. We do not think that you would have much trouble from the moisture from water-smoking the brick settling on the hollow tile if your draft is large enough.

We would suggest that you burn a kiln with possibly the upper quarter of the kiln set with brick, and if this is a success lower the brick one or two courses at a time until you determine the economical height at which you can change the setting from tile to brick.

We believe this is the best way to settle this question.

It is not absolutely necessary to grind material for making sewer pipe in a wet pan, if the material is plastic and tough enough to temper in a pug-mill or other machine. However, good practice has demonstrated that tempering clay in a wet pan is the most economical method of preparing material for sewer pipe manufacture.

In making sewer pipe, a bell is made at the bottom of the tile and the tile is then reversed and stood with the bell up while drying. We do not know of any manufacturer of clay machinery who makes an attachment for manufacturing sewer pipe on a horizontal drain tile machine. It may be possible, but we believe that the difficulties that would be encountered and the losses that would be entailed would be far greater than any advantage that might be gained.

⁂

ENAMELING ON SHEET STEEL

1,033. *Georgia—In glazing on a metal base (ware like the granite ware made by Vollrath & Co., Sheboygan, Wis., National Stamping & Enameling Co., Bellaire, Ohio, and others) what kind of slip would we use to get a very dark green or tile red? Who can we get this from?*

What kind of metal base do they use, if any special kind? How high heat and how long does it require to burn? Is the metal base "treated" in any way to apply the glaze? Does it have to be heated in ovens or saggers?

Any information on the above line will be highly appreciated by us.

Ware like the granite ware made by Vollrath or the National Stamping & Enameling Co. is produced by enameling on a sheet metal base. A particular grade of sheet steel is used and a ground coat applied which contains cobalt oxide. This material must be used to bring about the adhesion of the glaze to the metallic body. A cover coat containing the ultimate color of the glaze or enamel is then applied. This cover coat is a composition of several minerals, a typical one being as follows: Borax, 20 parts; feldspar, 32 parts; flint, 21.5 parts; soda, 10 parts; saltpetre, 2.25 parts; cryolite, 16 parts; antimony, 2.5 parts; whiting, 5 parts. To this is added a composition of the following: Seven per cent. tin oxide and 0.5 per cent. magnesia and six per cent. clay. This forms a white cover enamel.

The ground coat has a different composition, and due to the presence of cobalt oxide gives a blue color. The metal base used in this particular instance was 18-gage Armco iron plates.

The enamels are placed in an oven having a temperature varying from 950 to 1,000 deg. C. and they are placed in the oven for a period of from 85 to 130 seconds.

The metal base pieces are treated in the following way: They are scaled in an open fire kiln, after which they are pickled in a hydrochloric acid bath made up of one part commercial acid to six parts of water. After lying in the bath for about 30 minutes they are rinsed in clean water and dipped in a very dilute solution of sodium carbonate so as to neutralize any acid remaining on the plates. They are then dried as quickly as possible in a steam coil dryer. These enamels are heated in especially built kilns for enameling purposes.

To obtain a green color in an enamel, coloring oxide such as nickle oxide, chrome oxide, cobalt oxide, barium chromate and mixtures of these substances are required.

Reds are produced by iron oxide and by the introduction of such elements as tin, lead and chromium. Gold is also used to produce a red.

We would recommend that you read, if possible, some of the transactions of the American Ceramic Society, which deal on enamels. The matter of producing colors and glazes is quite a complicated proposition and requires the attention of one experienced in ceramic chemistry.

* * *

A SIMPLE COST ACCOUNTING SYSTEM

1,034. *Kansas—Could you give us information regarding some simple and accurate cost accounting system suitable for a small plant making common brick, with a capacity of 20,000 brick daily? We use the open air system of drying, and a year ago we built eight drying sheds with a capacity of 124,000 common brick. We use the elevating car system in connection with this system of drying. The rest of our plant consists of steam power plant, dry pan, pug-mill, brick machine, automatic cutter for side cut brick. We use three men in the clay pit and one man handles the clay car and takes care of the dry pan. Three men are required to take the brick off the belt and convey them to the sheds, and one of these off-bearers has time to take care of the cutting table. We have two down-draft kilns with a switch from the railroad into same.*

We reprint here a system of cost accounting in which imaginary figures are used, which we believe will be applicable to a small clay products plant. We have divided this system into two parts; one from the pit to the point where the brick are dried ready to go into the kiln, and second, from the point where the brick are dried to the finish. In ordinary practice there are probably seven departments in clay products cost accounting systems, but in this case we believe that these two divisions will suffice.

We believe that if you will arrange to charge every one of your expenses, whether labor, coal, repairs, supplies or office expenses, to one of the items shown on these sheets, and work out your production and cost according to this sample, that you will arrive at a unit cost which will be very satisfactory to you.

Monthly labor up to point when brick are dried ready to set	$437.50
Fuel for power	155.00
Repairs, supplies up to same point	60.00
Total for month	$652.50
Investment up to point of dried brick, including land and sheds	$20,000

30 Years' Experience

In engineering service is yours if you connect with us when you decide to install a Hand Poked or Mechanical Producers, for burning your ware, or a Rotary Dryer or Calciner.

Full information upon request

We also manufacture stacks, tanks and other steel plate work

DUFF PATENTS COMPANY
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MOLDS

Brick manufacturers will appreciate the value of perfectly finished, guaranteed Molds. The most exacting invariably demand Wellington air-dried Cherry and Maple Molds.

Wellington Molds are made in every shape and size, with panels, letters, etc. They successfully meet every demand of the industry.

Let us quote on your requirements.

Information on request

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Wellington Machine Co.
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CALDWELL
Service

HALF a million dollars' worth of well-selected stock, constantly maintained and an organization keyed up to the theory that plant efficiency is measured by the number of orders shipped on the day of receipt, accounts for Caldwell service. Let us figure on your requirements.

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This New Coal Catalog Will Insure You Economy in the Purchase of Your Coal

IT contains a wealth of data including articles, tables, general information and a complete coal field directory. It will aid you in purchasing the best coal for your particular needs.

There is no other book published which so completely covers all problems pertaining to coal.

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Brick and Clay Record
BOOK DEPT.
407 S. Dearborn St. Chicago, Ill.

Annual interest depreciation and obsolescence figure, which should be at least 17 per cent. of the investment	3,600	
Monthly interest depreciation and obsolescence figure which is 1/12 of the annual figure		300.00
Total monthly charge		$952.50
Divide by monthly product		500,000
Average monthly cost per thousand up to point of dried brick		$1.905
Labor of setting per thousand		.40
Labor for burning, cleaning, repairing, etc., per kiln	$ 30.00	
Fuel	150.00	
	180.00	
Divided by contents of kiln	100,000	1.80
Total to this point		$4.105
Add for breakage and loss in burning......5 per cent		2.05
		4.31
Labor for emptying per thousand		.40
For rehandling from storage		.40
Monthly labor	$ 100.00	
Divide by monthly output	500,000	.20
Balance of investment from point of dried brick including kilns, land, switch, etc.	25,000.00	
Annual interest depreciation and obsolescence figure which should not be less than 17 per cent. of the investment	4,260.00	
Monthly charge for same which is 1/12 of annual charge	355.00	
Divide this monthly charge by the good output of the kilns during the month, in this case 500,000 minus 5 per cent. equals 475,000.		.75
Total cost of making brick per thousand		$6.06

⁂

DIFFICULTIES IN OPERATING DRY PRESS

1,035. *Montana—I have a four mold model dry press machine, which I have been trying to operate for six years, but till now have been unsuccessful. The trouble is that the brick split horizontally thru the middle when they come out of the molds. If, however, the machine is thrown out of gear when the pressure is on the brick, and the pressure held on the brick by the clutch for about two seconds, the brick will come out of the molds without a crack. I keep the air holes open in the pressure plates. I have cut down the speed to 10,000 capacity ,and find no difference.*

Our clay is ground and screened thru a piano wire screen with 3/32 inch openings, and the clay is damp but not wet. This clay makes a good stiff mud brick with the exception that the brick shrink considerably in burning. I would also like to make a face brick.

Can dry press brick be made out of any kind of clay that will make a good stiff mud brick, provided other material is mixed with the clay?

From the description of your trouble with dry press brick we are almost positive that your difficulty lies in using too much pressure. The general rule or instructions for making dry press brick is to operate the press with all the pressure possible, without at the same time making the split brick that you speak of. In other words, if you reduce your pressure a small amount, we believe that you will have very good results. The pressure is regulated by moving the wheel which is directly beneath the delivery plate. A good dry press operator changes his pressure almost constantly during the day, at least four times an hour, depending on the uniformity of the run of clay and the moisture contained in it.

We believe that dry press brick can be made out of any clay that makes a successful stiff mud, if the clay is properly prepared before going into the machine. By this preparation we mean mixing of the proper amount of moisture. This percentage of moisture should be uniform in order to get the best results.

It is easier and there is less loss when making dry press using a plastic clay such as you have than when a non-plastic clay is used.

Brick and Clay Record will be very glad to receive suggestions on how this manufacturer's difficulty with his dry press machine may be overcome.

The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

REORGANIZATION OF ALTO BRICK CO.

An item in a recent issue of Brick and Clay Record regarding the reorganization of the Alto Brick Co. at Rome, Ga., was somewhat in error. C. H. Stone of that company has written us in full regarding the activities of his concern, and we reprint his letter herewith.

"I have received your postal calling attention to an item on page 307 of the February issue, and in justice to your publication and the reading public, feel certain that you will desire to give a correct statement of facts.

"The first announcement of renewed activities appeared in the local paper, and was entered by parties anxious to entertain notoriety in print, and did not possess either my knowledge or approval, and is, as a result, of little value so far as any truth is concerned.

"About one year ago the affairs of the Alto Brick Co.. reached a point where plant and financial conditions made it imperative that operations must cease.

"A very exhaustive examination was made of the entire property, mill and kilns, and resulted in a determination on the part of the owners to reorganize and rehabilitate their investment by much needed repair. The company henceforth will be known as the Ro-me-ga Clay Products Co.—with Dr. H. M. Brown, president, Charles H. Stone, Jr., vice-president and general manager, R. H. Pelton, treasurer and C. N. Reynolds, secretary.

"It will not be necessary to go off of our own property for any raw material, as on our 50 acres we possess shale, and alluvial deposits, and clay, with mill buildings housing the necessary machinery, and down-draft kilns with a capacity of over half a million brick.

"It is our purpose to manufacture a rough texture shale, a buff dry pressed face, and common stiff mud brick, and with sidetrack connections to the Southern, Central of Georgia, and Rome & Northern railways we do not lack shipping facilities, or contact with fuel.

"I have had a large force at work since early in December, and expect to be ready for steady operation not later than April 1.

"You are at liberty to place this information before your readers as you see fit, and by so doing stop the false impression which has gained headway, and caused considerable annoyance.

"I trust you will not recognize my immediate answer as a discourtesy to your highest motives, but a necessity."

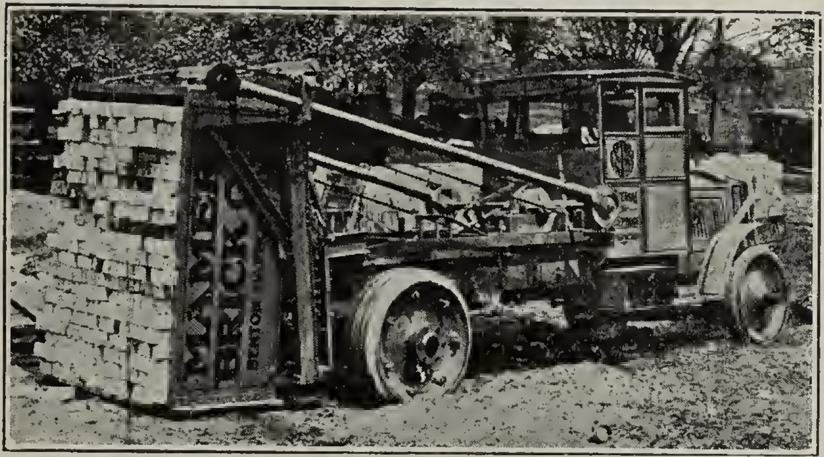
⁂

The Asbest Tile Co., Brooklyn, N. Y., has increased its capitalization from $15,000 to $50,000.

Why Worry Along With Obsolete Methods?

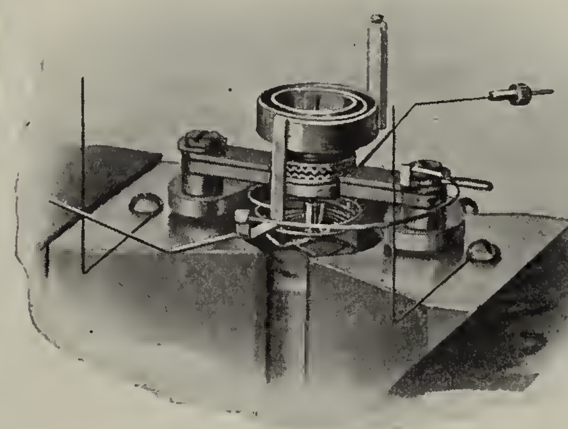
What the Fontaine Has Accomplished for Many Brick Companies, It Will Do for You.

You Are Interested in Delivering Your Brick in Better Condition for Less Cost.



Write Today for New Catalog. No Obligations

The American Truck Body Company
Martinsville, Va.



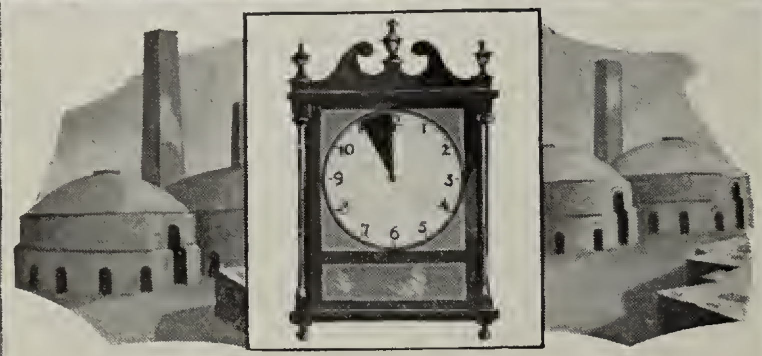
COMPLETE AUTOMATIC COMPENSATION

1. It automatically compensates for the cold junction temperature.
2. It automatically compensates for the temperature coefficient of the meter.
3. It offers a means for zero adjustment of a compensated pyrometer.

It eliminates:
Cold wells in the ground, that give trouble from moisture, heating from flues, etc.
Compensating boxes that require attention to keep in operative condition.
Thermo-couples with cold junctions of 200 or 300 degrees, producing serious errors.

Write for further details at once to The Brown Instrument Company, 4503 Wayne Ave., Philadelphia, or to New York, Pittsburgh, Cleveland, Detroit, Chicago, St. Louis, Denver, Los Angeles, San Francisco or Montreal.

Brown Pyrometers
Most used in the world



How much is an hour worth?

In some places, a bricklayer's hour is worth $1.25. How much is an hour worth to you who make bricks? How much are fifty to eighty hours worth to you?

Wayne Oil Burning Systems, used to fire your kilns, can save you as high as eighty hours on a single burn. Multiply hours saved by your production. Then write us for more details. Ask for Bulletins BCR.

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OIL BURNING SYSTEMS

The Minter System
Columbus, Georgia

Why is it economical in the use of fuel?

Because waste heat dries the ware, water-smokes the kilns, preheats air for combustion. Four processes that require heat and circulation and uses FUEL FOR ONLY ONE.

Why is it economical to install?

Because of rapid watersmoking, preheating, burning and cooling. Reducing equipment reduces interest, overhead and capital expenditure.

Why is it applicable to any Material?

that can be manufactured from clay? Because it is flexible as to volume, humidity, temperature, heat production and distribution.

Why is it always successful?

Because it is practical, scientific, durable and produces the cheapest building material made in America today.

Don't Build Before
You Know the Minter System

The Minter System
Home Office
Flint River Brick Co.,
Albany, Georgia

Engineering Department
and Branch Office
922 Broad Street,
Columbus, Georgia

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

---

DEATH OF FRED ALHORN

Fred Alhorn, brick and tile manufacturer, of Morganfield, Ky., died at his home, March 1, of heart disease superinduced by influenza. Mr. Alhorn, a native of Germany, came to this country in his youth. He lived at Corydon and Henderson before moving here. He was associated in business with M. M. Waller.

NOMINATE C. O. McNAMEE FOR MAYOR

C. O. McNamee, general manager of the Fulton (Mo.) Fire Brick Co., was recently nominated for mayor of Fulton by the Republican party, but upon his return to this city he declined the place.

Mr. McNamee has been in Fulton only a few years, but already has become a prominent factor in the business life of the city and is an active member of the Commercial Club, before which he has spoken on several occasions.

DEATH TAKES COL. HEISEY

Col. A. H. Heisey, of Newark, Ohio, president of the Pittsburgh Clay Pot Co., died a few days ago at his cottage in Atlantic City. He had gone to Atlantic City on November 1 for his health. Col. Heisey had lived in Pittsburgh many years. He erected and operated extensive tableware factories in Newark, Ohio, being the president of the A. H. Heisey Glass Co. He was also a director of the Manufacturers Bank of Pittsburgh, and identified with a large Cleveland insurance firm.

NEW COMPANY AT WILMINGTON

The Russell Clay Manufacturing Co., dealing in clay, stone, and so forth, has been organized at Wilmington, Del., with a capital stock of $600,000. O. B. Outen, M. L. Horty, and L. C. Christy, represented by the Corporation Service Co. of Wilmington, are the incorporators.

ATLANTA STARTS "HOME" EXPOSITION

Brick manufacturers and dealers of Georgia, with lumber and building supply dealers, architects and contractors, are cooperating in an elaborate "Own Your Own Home" exposition that is to be held at Atlanta Auditorium May 8 to 13, in the inauguration of an educational campaign to be carried out this year to bring about a greater activity in home building. The very best the home building art has to offer in dwellings of brick or lumber construction, material and house furnishings, and so forth, are to be shown at the exposition, together with financing plans to fit the purse of the workingman as well as the capitalist.

ADDS POWER SHOVEL AND COMPRESSOR

The Ford Brick & Tile Co. at Harrisburg, Ill., has recently added a power shovel and an air compressor to its equipment. This greatly facilitates operations at the plant.

TO MARKET BRICK COMPANY'S OUTPUT

H. D. Conkey & Co., Mendota, Ill., has arranged to market the entire output of face brick and common brick produced by the Danville (Ill.) Brick Co. This plant has a capacity of about 30,000,000 brick per year.

BRAZIL PLANTS RESUME WORK

Resumption of operations by the Clay Products Co., plant No. 1, Chicago Sewer Pipe Works and the Lyons Fireproof Co., of Brazil, Ind., makes a total of nine out of the 11 clay plants in that vicinity now running. Work has begun at the mines, and a great improvement in business conditions in the Brazil district is indicated.

WILL BUILD NEW DRYING SHED AND KILN

Martin Brothers, brick and tile manufacturers of Dunkirk, Ind., have plans drawn for the construction of a new kiln, capacity 75,000 brick, as soon as weather conditions permit building to be started. A two-story drying shed, 150 feet long, is another improvement to be constructed, and a continuous elevator will be installed on the plant.

ORDER $20,000 COAL RATE REFUND

Many brick companies in Indiana are directly benefited by action taken recently by the State Chamber of Commerce in refunding $20,000 in the Brazil coal district in four rate reparation cases. Action of the four cases which was directed against the Chicago & Eastern Illinois and the Pennsylvania railroads was taken on exceptions filed with the commission to the findings of a field examiner of the commission which heard the cases in Indiana last fall. The shippers to be benefited by the refunding order include: the Wabash Valley Electric Co., and the Clinton Paving Brick Co., at Clinton; Southern Fire Brick & Clay Co., at Mount Silica; National Drain Tile Co., the plant of which is situated at Locan; the Clay Products Co., and the Brazil Clay Co., at Brazil.

IOWA CONCERN DOUBLES CAPITAL

The Iowa Clay Products Co., Washington, Ia., has increased its capital from $100,000 to $200,000.

MAKES SELF-DUMPING CLAY CAR

The Adel (Ia.) Clay Products Co. has recently installed a new ten-ton clay car, motorized with three phase, alternating current. This car has an A bottom, self-dumping and self-closing, and is operated by two 30-horsepower motors. The Adel company made the equipment themselves.

IOWA BUSINESS SOMEWHAT BETTER

Crawfordsville (Ia.) Brick & Tile Works reports business as looking better, but nothing of a startling nature has developed as yet. L. H. McFarland of that company is of the opinion that there will be a fair amount of business if farm produce prices maintain their level or increase.

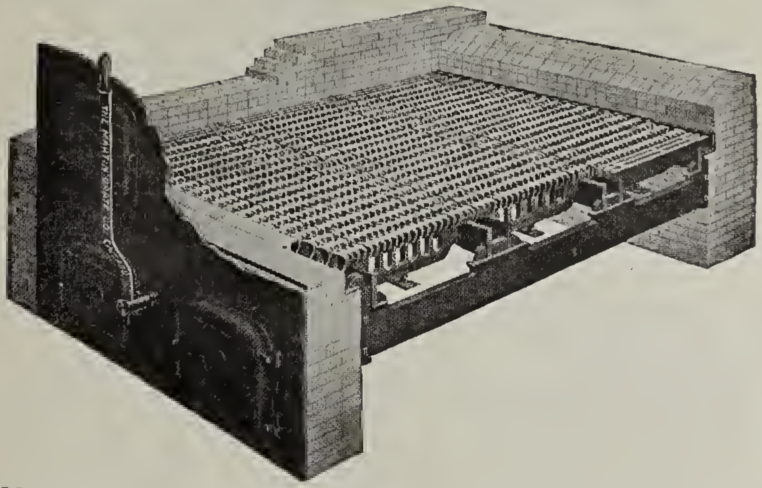
FORMING $250,000 COMPANY IN IOWA

Organization of a clay products company with authorized capital of $250,000 is under way at Bellevue, Ia. The concern will be known as the Bellevue Clay Products Co., and will succeed the Bellevue Pottery Co. which was formed in 1918. Dr. J. C. Dennison, Joseph Kelso, Jr., B. A. Beiling and Z. G. Houck are the backers of the new company. It is probable that a new factory, more conveniently located, will be erected.

PITTSBURG, KAN., SHOWS IMPROVEMENTS

The pay rolls of the coal mining companies in the Pittsburg, Kan., district are getting back to normal since the

The MARTIN GRATE is a Means of Economy Instead of an Expense!



Many clay plant operators have found Martin Grates to be a highly profitable investment, as a result of their unequalled ability to

SAVE COAL SAVE LABOR
REDUCE MAINTENANCE COSTS

Martin Grates are adjustable to all sizes of coal, without the purchase of extra parts. They require less attention and care than any other grate, and their rugged and extremely simple construction and general accessibility insures long life with practically no repairs.

Full information will be gladly sent upon request

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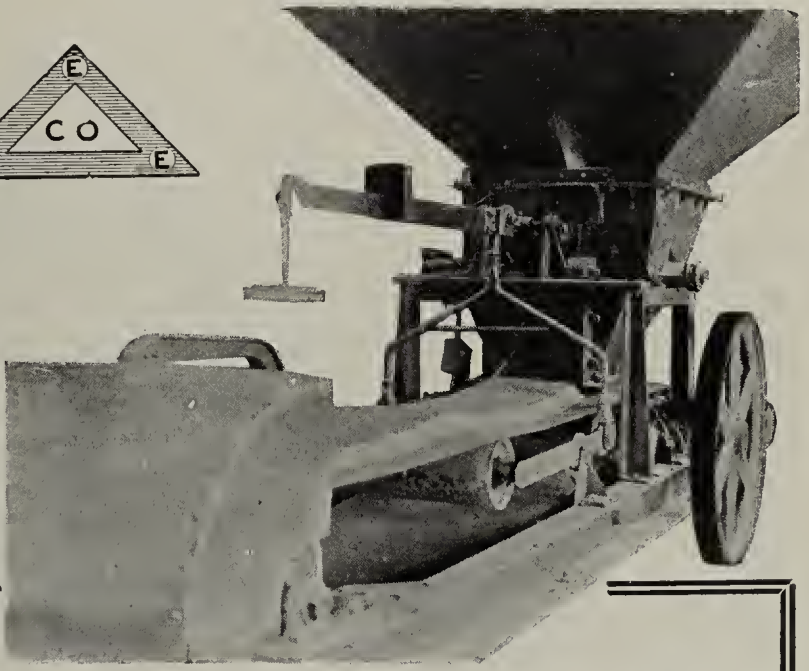


Regulates the Quality of Your Ware

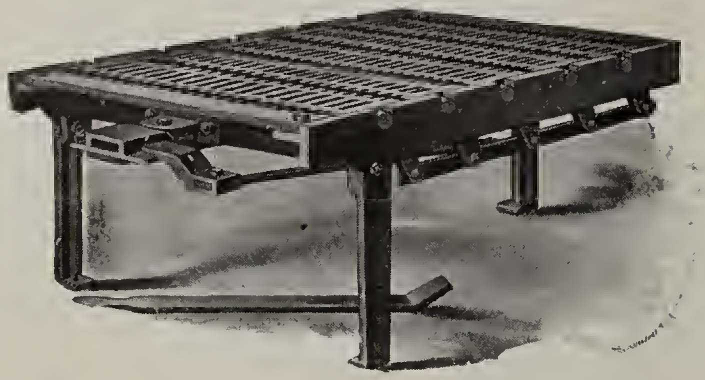
The Poidometer insures you a better product through the better mix it gives your clay.

This machine shoulders all the responsibilities of your pug mill men and eliminates them.

Improve the quality of your ware with less cost. Write for our catalogs and let one of the SCHAFFER Engineers call and explain the Poidometer to you in detail. There will be no obligation.

SCHAFFER ENGINEERING and EQUIPMENT COMPANY
2828 Smallman St. Pittsburgh, Pa.

PUT THEM IN THIS WINTER



The Canton Kiln Grate

From the time of the first installation in the kilns of the Massillon Stone and Fire Brick Co. of Massillon, O., up to the present time—dozens of sets have been installed—and are giving utmost satisfaction. Get a trial set, and prove with them that you can save over one-fourth of your fuel bill. Put them in just one kiln—their utility and the saving accomplished, convinces that the Canton is the only way.

Write Us Today

The Canton Grate Co.
1709 Dillon Place, CANTON, O

OSGOOD

OSGOOD ¾ and 1 cu. yd. Revolving Shovels are noted for their ability to produce more yards at less cost due to their rigid and sturdy construction, simplicity of operation and long life.

Every casting on Traction or Continuous Mountings is of open-hearth, annealed cast steel. Quick acting power steering devices, Horizontal Hoisting Engines, Vertical Submerged Tube Type Boilers and the fact that Crane, Clamshell or Dragline features can be embodied in their Construction are IMPORTANT TO YOU.

The OSGOOD Company
Marion, Ohio, U. S. A.

quieting down of the recent controversy in the coal fields. Several of the large brick and clay products plants are now running full capacity.

REDUCE BUILDING TRADES WAGES

The Master Builders' Association at Wichita, Kan., has adopted a new wage scale to become effective April 1. The maximum wage for an eight-hour day under the new scale is $8 for bricklayers, as against $9 now; the same for plasterers; carpenters and painters, $6; mortar men, $6 as against $5 now, and laborers, $3.50 as against $4.

NEW KENTUCKY COMPANY

Alhorn & Waller Co., Morganfield, Ky., to manufacture brick and tile, have incorporated with a capital of $40,000. Fred Alhorn, Sr., Fred W. Alhorn and M. M. Waller are the charter parties.

RUNNING WELL ON SEWER PIPE

The P. Bannon Pipe Co., Louisville, Ky., reports that it is running four to five days a week on sewer pipe, and is just starting operations again in the hollow tile plant which has been down for some weeks. P. Bannon, Jr., of the company, is quite optimistic concerning the outlook.

HANDLING WELL-KNOWN FACE BRICK LINES

L. J. Bolster & Co., who recently started business in Louisville, handling brick and general lines of building supplies, have received their samples, and have arranged to install a first-class sample room, with the various lines laid up in pattern walls. Included in the lines now handled are those of the Thomas Moulding Brick Co., Chicago; Brazil (Ind.) Clay Co.; Tiffany Enamel Brick Co., Chicago; W. G Bush Brick Co., Nashville, Tenn.; Iron Clay Brick Co., Columbus, Ohio, and Cambria Clay Products Co., Black Fork, Ohio.

MARKET AT LOUISVILLE, KY.

Demand continues a little quiet due to mean weather, but there is some business being done in common and face brick. While it is not heavy, it is something. Plants are now running on very fair schedules on brick for stock, but hollow tile production is not heavy. Sewer pipe production is continuing on a normal basis, as there is prospect of a big demand when proposed bonded sewer work gets started. Prices are steady, altho there have been some reports getting into the newspapers of weakness and possible lower markets, which are having a tendency to delay work a little. Local quotations range at: Salmon, $10 a thousand; common, $13@18; face, $20@30, delivered, subject to five per cent. 15 days. Good common brick are quoted at $18, and face at $30 for the best grades.

FACE BRICK IN LOUISVILLE STYLE SHOW

As a result of the changing times there has been quite a bit of style in building brick the past few years, therefore a style show is about as good a place for exhibiting the latest styles in brick as it is for exhibiting the latest styles of wearing apparel, shoes, millinery, etc., is the contention of Wm. F. Whaley, local face brick dealer, who has reserved space for the second annual Style Show and Merchants' Exhibit of the Louisville Retail Merchants' Association, March 31 to April 8, inclusive, at the Jefferson County Armory.

Mr. Whaley said: "I'm going to lay up regular panels of fancy face brick, to show 'Milady' the latest type brick for her home. We're going to lay them in paneled blocks, in colored mortars, just as they are laid in a high-class brick display room of the dealer. It is going to cost a little money, but it should get results."

MOVES TO NEW QUARTERS

The Southern Tile Co. of New Orleans, La., has moved into new and larger quarters directly across the street from its former site. The new factory has a floor space of 6,900 square feet, and a warehouse 1,500 feet square is located nearby.

This company began with a small shop ten years ago, and its growth has been steady until it now ranks with the best equipped business of its kind in the states. Floor tile, wall tile, and tile bathrooms form a large part of the business.

SAVAGE MOUNTAIN PUBLISHES FOLDER

The Savage Mountain Fire Brick Co., Frostburg, Md., has recently published a folder describing the Frostburg Rough Texture brick made by that company. It is a four-page pamphlet, and sets forth the merits and qualifications of the brick, and shows some very fine examples of its use in residences and other structures.

PREPARING FOR GOOD YEAR

The Huron Clay Products Co., of Croswell, Mich., anticipates a good year, and will commence operations as soon as weather conditions permit. During the last two weeks of February William J. Miller of the company contracted orders for 13 carloads of tile, five of which have been loaded and shipped.

BUILDING NEW 30-FOOT KILN

The Bentler Brick & Tile Works at St. Cloud, Minn., is adding one 30-foot down-draft kiln to its present plant equipment. This company has recently replaced a gas engine with a Ford motor for pumping water from the pit.

TO BUY 2,000,000 ILLINOIS PAVERS

Purchase of 2,000,000 paving brick at $36.12 per thousand from the Streator (Ill.) Clay Co., was recommended to the City Council of Minneapolis recently by action of the council paving committee. Last year the city paid from $40 to $42 a thousand for paving brick.

MINNEAPOLIS HAS BEST BUILDING SHOW

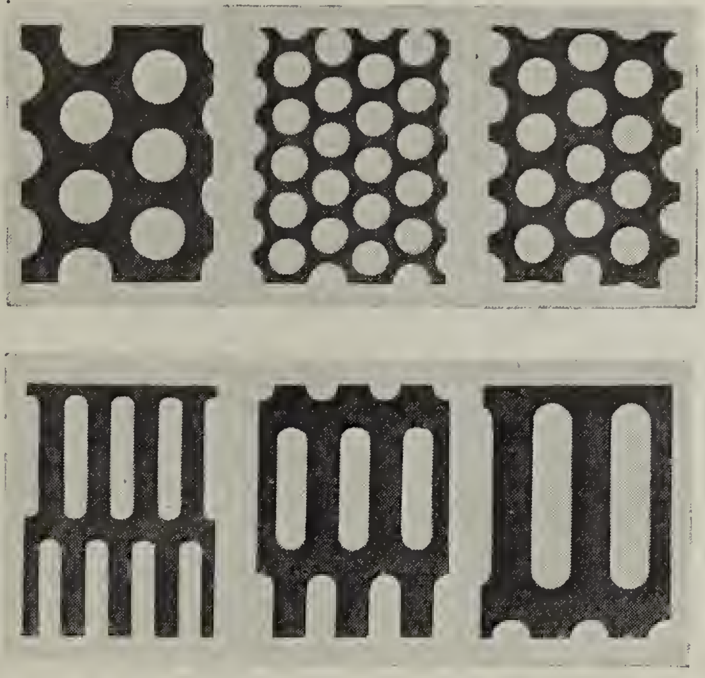
The Minneapolis Builders' Exchange building show, which will be held in the Armory, March 20 to 25, will be the foremost exhibition of its kind in the country this year. F. S. Keating, of the Drake Marble & Tile Co., and chairman of the show committee, declared at a meeting of exhibitors at the Exchange March 10.

"The Minneapolis show," Mr. Keating said, "has a greater amount of space than any other show in the country. It also has a larger number of exhibitors of different lines and materials than any other show."

There were about 200 exhibitors at the luncheon meeting. Space for exhibits in the Minneapolis building show is nearly all contracted for. Every branch of the building trade will be represented and great interest is being shown in local building circles. The Minneapolis Builders Exchange conducted a publicity campaign to advertise the show.

The Minneapolis Tribune devoted space in each Sunday edition under the heading "Satisfy That Desire to Own Your Home." Julian P Farnam, Minneapolis architect, was engaged to give

Perforated Steel Screens



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All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

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Economy that endures

Consider the cost of a valve by the service it gives, for it is the valve that gives dependability for the longest time that proves most economical.

A valve to be good and satisfactory under all conditions must be strong enough, and made for maximum service, not merely the average—Jenkins Valves are such valves.

Know the genuine by the Jenkins "Diamond" and signature.

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Jenkins Valves
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And where can you find as satisfactory an article for elevating and conveying purposes as rubber belting?

Our belting experts will gladly assist you on any belting problems.

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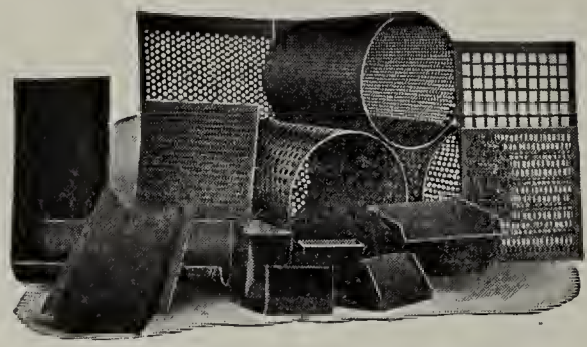

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a series of plans and instructions on home building and to otherwise aid Minneapolis citizens in building homes.

FIND BRICK 200 YEARS OLD IN MISSOURI

A brick made more than 200 years ago was recently discovered in tearing down a chimney on an old building in Bloomfield, Mo. The brick bore the date "1720" scratched on the face, and was in good condition. It was obviously handmade, and plainly shows the finger prints of the person handling it in process of manufacture. This brick was on the inside of the chimney and had been protected to some extent from weather conditions.

OFFERS TILE FOR HOG HOUSE AS PRIZE

The lucky owner of the winner in the boys' pig club at the Jefferson County (Neb.) Fair this spring will receive enough hollow tile to build a 12x24 hog house from the Clay Products Co., of Endicott, which is owned by Fairchild Bros. The value of the tile is approximately $100.

This company has recently been awarded the contract for the brick to be used in the construction of an $80,000 school house at Elm Creek, and also for the brick for another large school at Imperial.

FIRE BRICK COMPANY ORGANIZED

The Keystone Refractories Co., Jersey City, N. J., has been organized under state laws with a capital of $10,000, to manufacture fire brick and other refractory products. The company is headed by F. W. Reisman, J. W. Young and L. E. Turk, 3 Foy Place, Jersey City.

NEW BRICK COMPANY IN NEWARK

The Estate of James R. Sayre, Jr., Inc., Newark, N. J., has been incorporated under state laws with a capital of $728,000, to manufacture brick and other burned clay products. The company is headed by M. H. Barker, E. M. Burbank and H. T. Brooks. The company is represented by Edward M. and Runyon Colie, 763 Broad Street, Newark.

FORM BRICK COMPANY AT NEW YORK

The Eastern Brick Co., New York, N. Y., has been incorporated under Delaware laws with a capital of $2,000,000, to manufacture brick and other burned clay products. The company is represented by the United States Corporation Co., 65 Cedar Street, New York.

FORM FIREPROOFING COMPANY

The Rockwood Fireproof Products Co., New York, N. Y., has been organized under Delaware laws with a capital of $100,000, to manufacture burned clay and other fireproof building materials. The company is represented by the United States Corporation Co., 65 Cedar Street, New York.

⁂

A recent incorporation is that of the Dayton (Ohio) Brick Co., capital stock, $25,000, by J. O. Miller and W. P. Baughman.

INCREASES CAPITAL STOCK $25,000

The Cleveland (Ohio) Clay Products Co. has amended its articles of incorporation by increasing its capital from $25,000 to $50,000.

BRICK CLUB MEETS WEEKLY

Weekly luncheon meetings of the Cincinnati Brick Club are now taking place at the Chamber of Commerce. So far, these meetings have been altogether social in nature.

FORM CLAY COMPANY IN NEW CONCORD

The Muskoal Co., of New Concord, Ohio, has been incorporated with a capital of $10,000 to deal in coal, clay and other minerals and to manufacture clay products and produce coal. Incorporators are Mary W. Taylor, W. B. Baughman, C. V. Cain, J. B. Smith and H. E. Elliott.

CLOSES PLANT PENDING NEW WAGE SCALE

The plant of the Straitsville Impervious Brick Co., at New Straitsville, Ohio, has been closed down recently because of trouble in negotiating a new wage scale. With reductions secured in the wage scale at the plants in the Shawnee district, steps have been taken by the company to secure wage reductions at the New Straitsville plant.

SHAWNEE PLANT TO START SOON

The Shawnee plant of the Central Refractories Co., of Columbus, Ohio, will be placed in operation soon following an idleness of several months. Iron spots and creams will be manufactured at that plant. Steps are also being taken by the company to start operations at the New Lexington plant of the company where face brick will also be manufactured.

COST OF BRICK ROAD BUILDING REDUCED

Contracts for brick roads recently awarded in Canton, Ohio, represented a lower cost per mile than for any road project since 1914. The bids were below the estimated cost in practically every case, making it necessary to reduce the bond issue. The roads will cost approximately $30,000 per mile, while within recent years the price has been as high as $50,000 for similar types. This seems to indicate that the cost of road building is rapidly approaching the pre-war level.

PLANNING TO DOUBLE PRODUCTION

The Superior Brick Co., Cleveland, Ohio, according to J. F. Aten, general manager, is making preparations to double production within the next month. Additional facilities are being put into operation at the present time.

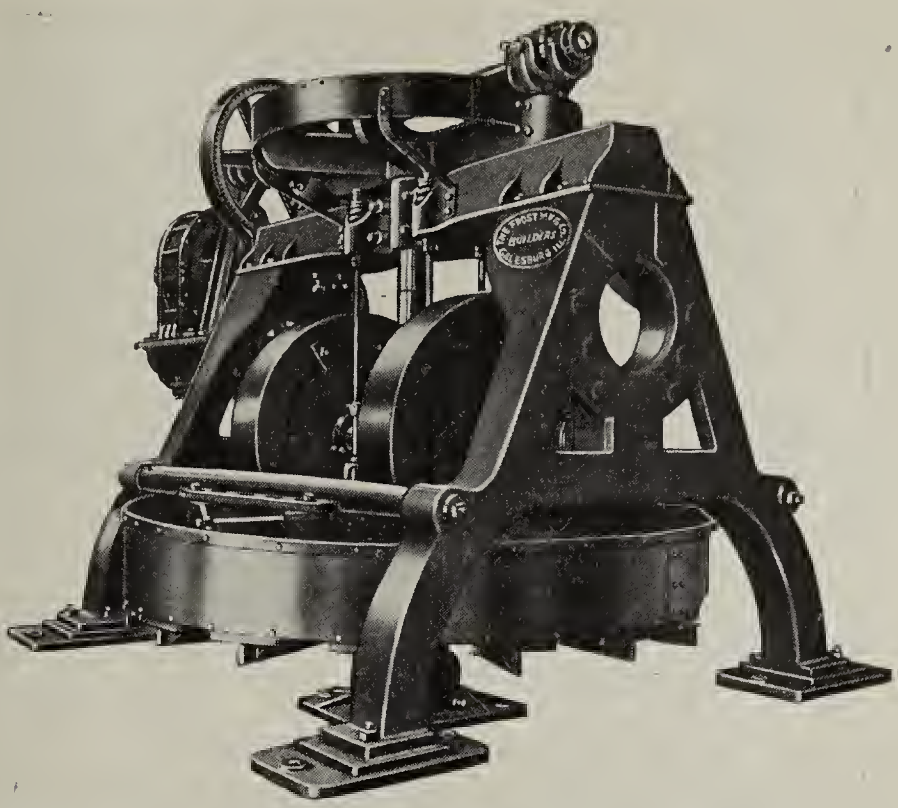
General expansion is responsible for the move. Mr. Aten said that while prospects for the best season in history were in sight, the expansion policy of the company would be contingent, to some extent, on developments in the local building situation which is now tied up by labor troubles.

BUILDING PLANT AT NEW PHILADELPHIA

New Philadelphia, Ohio, has another industry. It is a brick plant owned by W. K. Moore, well-known coal operator, construction of which was started this week. The plant, which will cost between $40,000 and $50,000, will have a capacity of 40,000 brick a day. Mr. Moore expects to be turning out brick and hollow ware within two months. One hundred thousand brick have been delivered at the factory site. The most modern up-to-date brick making machinery has been purchased and is ready for shipment. The plant will give employment to 100 men.

FIRST MEETING OF COLUMBUS CLAY CLUB

At the first monthly get-together meeting of the Columbus (Ohio) Clay Club about 30 members were guests of the Gaddis-Harrison Brick Co., at the display rooms of the company at Fifth and Broad Streets, March 6. Galen Starr Ross, who conducts a school for the training of executives was the speaker following a dinner. He spoke on business ethics as it applies to the clay products industry. A musical



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That Frost Pans aim to give you the best quality
of material, workmanship and fabrication
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ESTABLISHED 1851

MARION

"Rust Special" Feeder Mixers

Promote economy in your plant by PROPERLY MIXING YOUR CLAY AND THUS INSURING MORE PERFECT WARE WITH EACH BURN.

Remember Mr. Clay Products Manufacturer, it is far easier to increase the profit in the brick and clay industry by reducing the cost of production than by increasing the selling price.

The "RUST SPECIAL" will
help reduce your costs.
Ask us.

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Unless you know, your insurance does not adequately protect you.

Fires are adjusted on a basis of facts—not estimates.

Get these facts now, before the fire.

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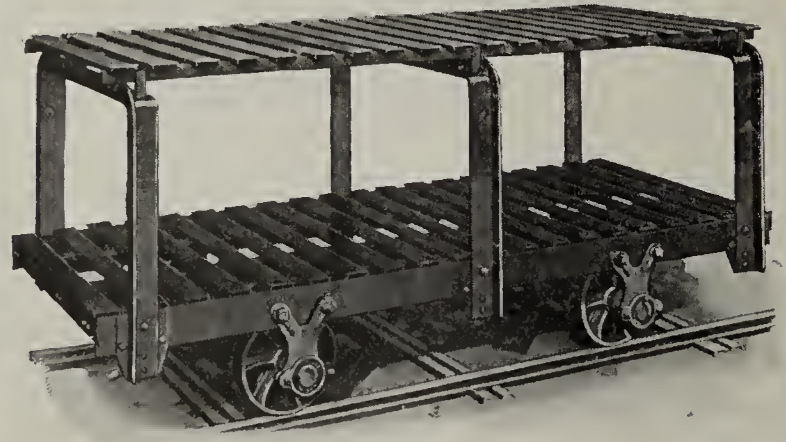
Here Is a Dryer Car That Meets All Requirements

Robinson cars have that much desired ability to cope with conditions—satisfy requirements and still maintain economy.

If you need dryer cars for work where economy and serviceability rate high, you can make no better decision than to buy Robinson Dryer Cars.

May we not hear from you? It won't obligate you to write us for information. Do it now.

FRANK H. ROBINSON
Dryer Cars and Clay Working Equipment
Factory and General Office, Pittsburgh, Pa.



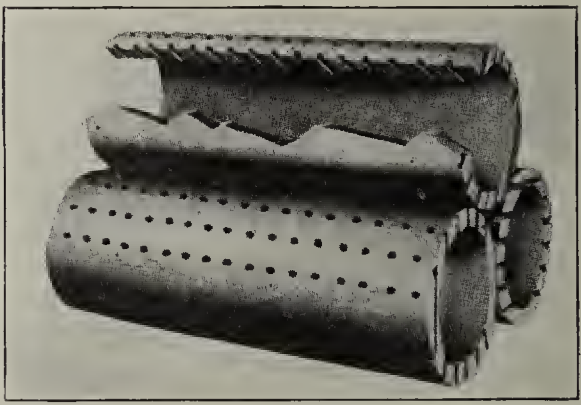
program was rendered and the guests surprised the hosts by presenting them with an engraved chime clock. W. T. Matthews, sales manager of the Claycraft Brick Co., is president and R. M. Lucas, secretary of the club.

OHIO DOES MUCH BRICK PAVING

Owing to a controversy over the high price of cement in Ohio as compared with that sold in Illinois for road building, paving brick manufacturers have benefited to a certain extent. The Ohio Department of Highways and Public Works recently awarded contracts for three brick roads of considerable importance. The engineers of the department are also giving more attention to brick in making up their specifications. Prospects for the paving brick business in Ohio are becoming brighter and it looks like a good season for them. Many street paving jobs are being advertised or projected and many provide for brick paving.

GETS PATENT ON PERFORATED DRAIN TILE

C. P. Funk, president of the Ohio Farmers' Clay Co., of Wooster, Ohio, and inventor of perforated drain tile, has been granted two patents fully covering tile and process of manufacture. The tile have grooved ends and are perforated with numerous small holes passing diagonally thru the wall of the tile. This new type of tile is being manufactured practically as cheap as common tile, it is said, and large quantities are being sold. The company states that it is not able to take care of the orders coming in, and is contemplating the enlarging of the plant and the increasing of its capacity in the near future. The concern expects a big business during the coming year.



Perforated Drain Tile Manufactured by Ohio Farmers Clay Co., Wooster, Ohio.

CONTINENTAL MOVES TO COLUMBUS

Steps have been taken by the Continental Clay Co., of Columbus, Ohio, to start the four plants located in the northeastern part of the state. Extensive improvements and repairs have been made at all of the plants which are just about completed. The executive offices of the company have been moved from Canton to Columbus, following the selection of Warren B. Ferris, of Columbus, as president. Plant No. 1 at East Greenville, Ohio, will manufacture 5x8x12 shale hollow tile; plant No. 2, also at East Greenville, will produce hollow shale building tile, 4x5x12. Plant No. 3, at Salineville, will produce 8x8x16 hollow building tile, glazed and Plant No. 4, at Warmington, will produce rough texture face and common brick.

IRONTON PLANT MAKES BIG IMPROVEMENTS

The Ironton (Ohio) Fire Brick Co. has just recently increased its capital, to make possible some extensive improvements at the plant at Ironton, Ohio, and also develop a large acreage of newly acquired fire clay land in Carter County, Ky., in the heart of the famous Olive Hill Fire Clay region.

The building of two new 32-foot inside diameter, round, down-draft, double-bottom kilns, a new steam heated concrete drying floor and the complete rebuilding of the ground clay storage bins, elevators, and so forth, together with the installation of a measuring device which enables the company to measure positively and accurately any desired mixture of clays, gives them a plant at Ironton, right up to the minute in every particular.

A 1,500-foot, double track railway switch has been built at Bradmyer, Carter County, Ky., on the Lexington division of the Chesapeake & Ohio Railway, from which point the company is now shipping clay to the plant at Ironton. A 2,800-foot tramway connects the companies clay tipple at the switch with the mine, and so carefully has the tramway been constructed, that one man, single handed, can deliver any number of cars loaded with clay from the mine to the tipple by gravity.

712 acres of clay land are available, which has been estimated to furnish enough clay to last 100 years, manufacturing at the rate of 100,000 brick per day. The clay deposit is exceptionally fine—a recent analysis showing a fusion point of cone 33—3,254 deg. F. and analyzing:

Silica	51.97
Alumina	45.07
Ferric Oxide	1.57
Lime	.60
Magnesia	.46
Alkalies	.61

Plans are now being laid for the erection of a modern brick plant at the company's mines in Kentucky, where a plant site has already been provided.

E. F. Myers is president and general manager.

OKLAHOMA PLANT ENLARGING

After having run continuously for ten years, the Collinsville (Okla.) brick plant is making repairs and additions to enlarge its producing capacity. Practically all grades of brick are manufactured.

START CAPACITY PRODUCTION

Full capacity operation was resumed on March 15 by the Hobart (Okla.) Brick & Tile Co. This will bring the pay roll up to $4,000 a week. The plant is located west of Hobart, and is one of the most complete in Oklahoma.

TULSA COMPANY PRODUCTION STEADY

Fairly steady building in Tulsa, Okla., has had its effect on the business of the Tulsa Vitrified Brick & Tile Co., enabling its force to be kept constantly busy. The company is prepared to take care of the increasing business which every spring brings, and has already felt signs of the big demand in present sales.

NEW OREGON FACE BRICK PLANT

The Oregon Face Brick Co., Willamina, Ore., has been incorporated with a capital stock of $150,000 by Andrew and Harry Kershaw and Robert Shelley.

PRIZES FOR BRICK HOUSES

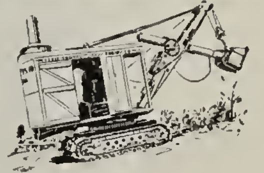
The Philadelphia (Pa.) Brick Manufacturers' Association has arranged for prizes, in the form of bronze tablets, for the three best specimens of buildings in which Philadelphia-made brick are used. One such tablet will be presented to the owner of the best-designed individual building; one to the builder of the best operative dwelling; and the third to the owner of the best industrial building. The selections will be made from 1922

"WITH ONE MAN and one ERIE Shovel, we easily get out 300 cu. yds. per day. This is sufficient to take care of the daily output at each of our 3 plants, but we could easily increase this output if necessary. In our opinion, the ERIE is *the* shovel."—*Edw. T. Conley, Sec'y, Bradford Brick and Tile Co., Bradford, Pa.* (Owners of 3 ERIES.)

For larger output than the above— 500 to 600 cu. yds. per day, or more— it is advisable to use two men on the shovel. But when your plant requirements are not too great, an ERIE and one man will serve.

We will be glad to send you data showing just what you can do with the ERIE. Write us.

ERIE STEAM SHOVEL CO.
Formerly Ball Engine Co., Erie, Pa., U. S. A.
Builders of ERIE Steam Shovels
and Locomotive Cranes



ERIE Shovels can be had with broad tired traction wheels, standard gauge car wheels, or on ERIE *lubricated* caterpillar type mounting. All interchangeable on the same truck frame.

ERIE Revolving Shovels

BALL Engine Co. Erie, Pa.

Prepare to Burn Any Kind of Coal!

Equip your furnaces with a

COKAL HAND STOKER

The "Chainless" Stoker

The oncoming coal strike is assured—a fight to the finish—in the meanwhile you will have heaps of trouble in burning the coal you must use unless you are equipped with a furnace to handle all kinds and grades. Cokal Stokers have proven their ability to successfully solve burning troubles. They are automatic, very rugged and extremely simple.

May we send you complete information today or have one of our engineers call on you with a small working model?

No obligation for this service.

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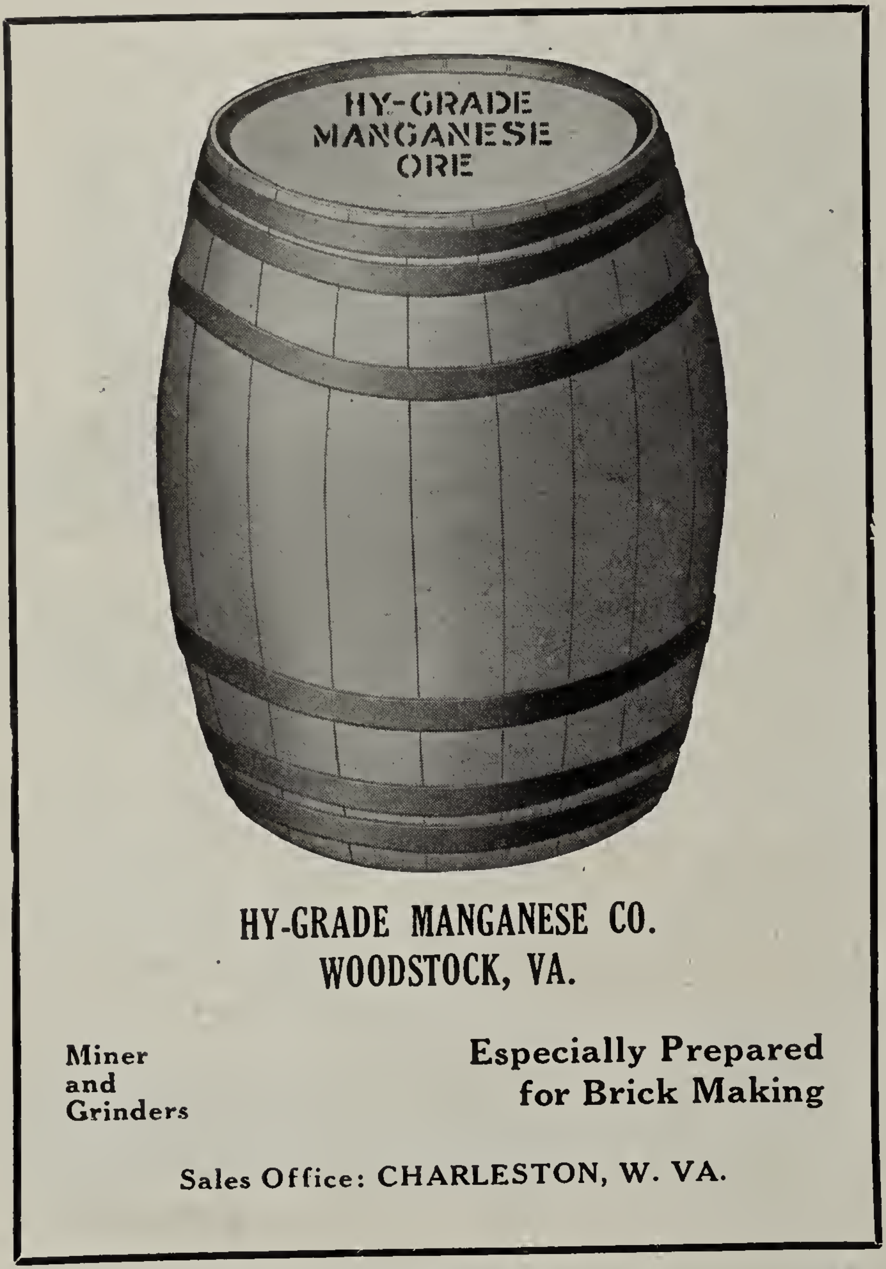

HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
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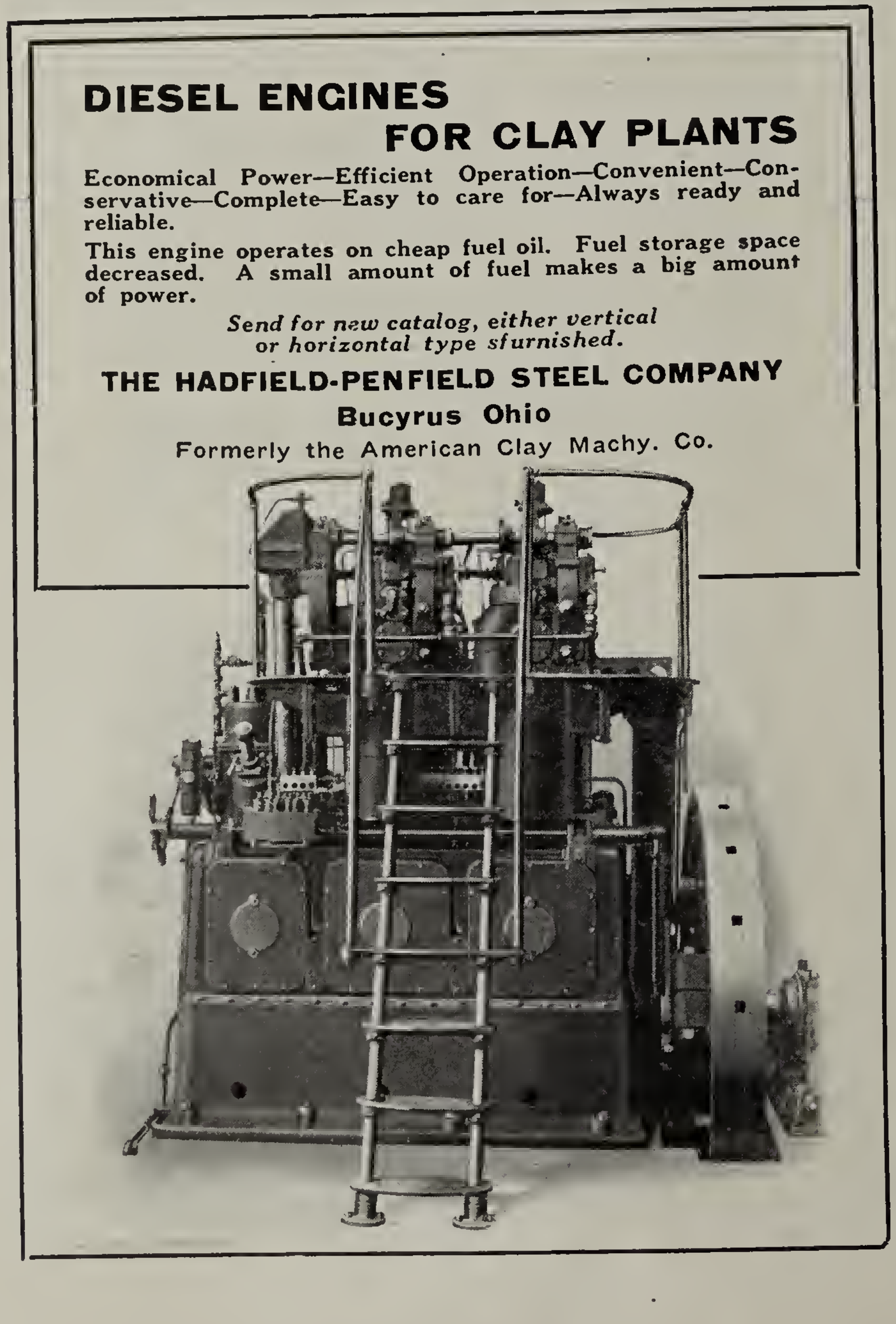
Grinders

Especially Prepared
for Brick Making

Sales Office: CHARLESTON, W. VA.



DIESEL ENGINES
FOR CLAY PLANTS

Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal type sfurnished.

THE HADFIELD-PENFIELD STEEL COMPANY
Bucyrus Ohio
Formerly the American Clay Machy. Co.

construction, running until the conclusion of the year, and a committee of three architects has been selected to act as judges. It is believed that the result of the announcement will lead to better types of construction thruout the city in different classes of structures. Charles Siner is president of the association.

NEW PENNSYLVANIA CONCERN STARTS

The Superior Basic Brick Co., with offices at 517 Bessemer Building, Pittsburgh, Pa., is now operating a fire brick plant near Pittsburgh. This is a new concern.

BRICK COMPANY DISSOLVES

The McGeary Fire Brick Co., Pittsburgh, Pa., has arranged for a dissolution of the company. Alter, Wright & Barron, 1012 Park Building, Pittsburgh, represent the company.

DISCOVER FIRE CLAY DEPOSIT

Fire clay has been discovered on a tract of land on the outskirts of Nant-y-Glo near Johnstown, Pa., and a company is being formed to develop it, a report states. Thomas P. Burns is the owner of the tract which is of 100 acres.

SECURES BRICK ORDER FOR 54 HOUSES

The Glen-Gery Shale Brick Co., Reading, Pa., has secured a contract for furnishing brick for 54 residences, to be erected in pairs on North Eleventh Street, between Union, Exeter and Amity Streets, each 2½ story, 32x45 feet. The project will cost about $250,000.

TO OPEN NEW SALES OFFICE

It is reported that the Southern Brick & Tile Corporation, a large selling agency, will open a sales office in Columbia, S. C., soon. Atlanta and Charlotte will be the other points of operation.

SUMTER BRICK WORKS STARTS

Surplus stock on hand in the yards of the Sumter (S. C.) Brick Works has been disposed of, and operation was resumed the first week in March. This plant had been shut down since October 1.

FARRAGUT FACED WITH KEY-JAMES BRICK

An item in the March 7 issue of Brick and Clay Record stated that the Farragut Hotel at Knoxville, Tenn., was built with brick furnished by the Knoxville Brick Co. We have since been informed by the Key-James Brick Co., of Chattanooga, that this building is faced with Key-James Burlap Textures in full range of colors.

HERBERT-FISCHER MAKING ADDITIONS

The Herbert-Fischer Brick Co. is making extensive additions to its plant at New South Memphis, Tenn. Another unit is being added to the kiln section, this being of the type known as the Herbert kiln, perfected by T. L. Herbert, president of the company. The kiln is coal fired and is fed from the top, and the company declares much better ware is produced by this kiln than by the other kilns on their plant. The total capacity of the plant will be increased to 160,000 brick daily when the new unit is in working order.

PLANS TO INCREASE OPERATIONS

The Crisp Brick Co., Ennis, Tex., is maintaining active production at its yard, and proposes to increase operations at an early date. The company has received an order for 50,000 brick for the rebuilding of a large structure at Paris, Tex., destroyed by fire several months ago. J. P. Sims is manager.

LOOK TO MEXICO FOR FUTURE MARKET

It developed at the recent annual meeting of the directors of the International Brick Co., at El Paso, Tex., that the future expansion of the brick-making plant of the company depends upon the recognition of Mexico by the United States Government. This plant is owned and operated by the International Bricklayers, Masons and Plasterers' Union. It was established several years ago as an investment of funds of the union and is reported to have been very successful. Should recognition of Mexico be made it is expected that a great impetus would be given to building operations in that country and this would afford a good market for brick. William J. Bowen, of New York, president of the International Bricklayers, Masons and Plasterers' Union, who attended the directors' meeting, was re-elected president of the International Brick Co.; Thomas R. Preece, of Chicago, was re-elected first vice-president; A. E. Bartlett, of El Paso, re-elected second vice-president; William Dobson, of Indianapolis, secretary-treasurer, and J. F. Driscoll, of El Paso, assistant secretary-treasurer. The company is capitalized for $200,000.

It is stated that this brick manufacturing plant has served to give the officers and members of that organization a better insight into the relations between the various departments of the industry than they formerly had and that they are now able to survey conditions from the employer's point of view in a more impartial light than formerly.

MANGANESE COMPANY EXPANDS

The Hy-grade Manganese Co., Woodstock, Va., has filed a charter under state laws with a capital of $100,000, to operate properties near Zepp, in the Cedar Creek Valley section. The company's mines at this location are now giving employment to about 30 men, and the manganese deposits are said to be among the finest in the country. Under the company's charter, its real estate holdings are to be limited to 3,000 acres. N. H. Manafee, Bluefield, W. Va., is president; Charles B. Massie, vice-president, and J. C. Adkerson, manager.

NEW CANADIAN BRICK COMPANY

A new Canadian brick concern is noted in a list of incorporations recently received. This is the Stephen Brick Co., Ltd., with head office in the Parish of Simonds, St. John, N. B. The capital stock is given as $99,000. Thomas and Lewis Stephen and Horace Porter, all of St. John City, are the incorporators. They will take over Lee's brickyard in the Parish of Simonds, and are authorized to carry on a general manufacturing and mercantile business.

CANADIAN ITEMS OF INTEREST

Shale Products, Ltd., Inglewood, have started up their plant.

Joseph Johnson, manufacturer of brick and tile, Monkton, Ont., is dead.

All the brick plants at Milton are taking on men and are operating on a ten-hour basis.

The Sidney Island Brick & Tile Co., Sidney Island, B. C., has resumed operations.

John S. McCannell, of the Milton Pressed Brick Co., Ltd., has returned after spending the past two months at St. Petersburg, Fla.

Ryland H. New, Hamilton; T. H. Graham, Inglewood; Ray Price, Humber Bay, and C. A. Millar, of Mimico, attended the Western Ontario Clayworkers' Association convention at Chatham on March 8 and 9.

No 196

Designed for speedy handling of damp materials. Low front and shallow depth permits quick discharge. Elevates at low angles. Will work in a boot.

No. 161
Stamped from a single sheet of steel. Rounded corners and bottom. Sharp "bite". High speed delivery.

No. 133
For mud, ore, coal, broken stone, etc. Elevates at low angles and without a boot.

SALEM
ELEVATOR BUCKETS

Half a century of leadership! Premium winners in 1880—the best on the market ever since.

In stock always—a complete line of elevator buckets and conveyors for every possible need. Prompt delivery. Special sizes quickly made to order.

Send for price list.

MULLINS
BODY CORP.
Stamping Dept
101 Mill Street, Salem, Ohio
Successors to the W. J. Clark Co.

"It enabled us to eliminate six men from the pit at a saving of about $30.00 per day"

That is what Mr. H. W. Shields of the S. P. Brick and Tile Company, Fresno, California, says for his one-man excavator. Read his letter:

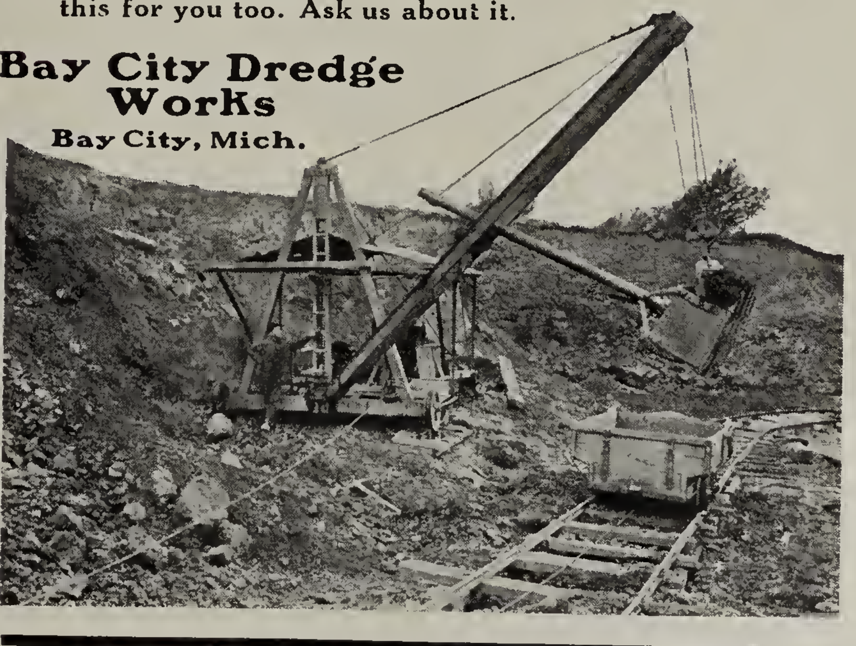
"Answering yours of the 10th with reference to the excavator, beg to advise that we are very well satisfied with the machine. It enabled us to eliminate six men in the clay pit at a saving of about $30.00 per day.

Our bank is 14 ft. deep and of a very hard clay formation. Before getting the excavator, we had to use quite a little of powder. This we also have been able to eliminate. Furthermore, we get an even mixture of clay from the bottom of the clay to the top of the pit, which gives us a much better brick.

We estimate that the machine has paid for itself during the last season."

The one-man excavator will do this for you too. Ask us about it.

Bay City Dredge Works
Bay City, Mich.



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MORSE CHAIN COMPANY ITHACA, N.Y. SILENT CHAIN THE MORSE ROCKER JOINT POWER TRANSMISSION

MORSE Silent Chain Drives are 98.6% efficient for small or large drives. No worry about belt trouble, slippage of power and loss of production where Morse Chain Drives are installed.

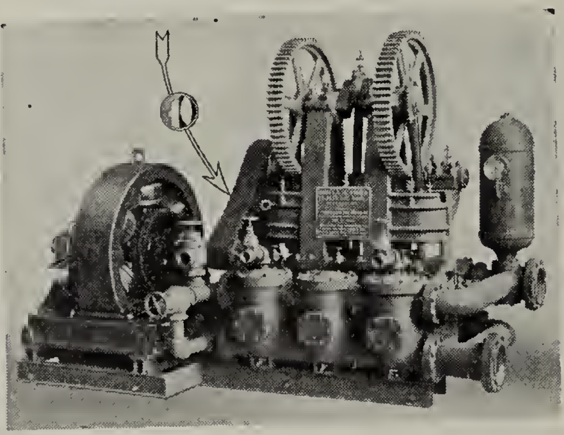
Write us if you have a transmission problem. We give engineering service without any obligation.

Drop a Card to the Nearest Morse Engineer

MORSE CHAIN CO.

Largest Manufacturers of Silent Chains in the World

ITHACA, NEW YORK



CHARLOTTE, N. C. CHICAGO CLEVELAND KANSAS CITY, MO.

Where There Is Real Work to Be Done You Will Find a "Minster"

New Model "F"—Six Ton

Maximum production is essential—you can get it with a "MINSTER."

Is this the Missing Link? Think it over. Write for information.

Experience, the Best of Material, Careful Workmanship, and Rigid Inspection enable us to maintain Leadership.

The Industrial Equipment Company
510-516 Ohio Street
Minster, Ohio
Formerly The Cummings Machine Co.

Eastern & Export Department,
The Herbert Crapster Co., Inc.
One Madison Avenue
New York City

CHANGE NAME OF SAFETY ASSOCIATION

Clay Products and Glass Manufacturers' Safety Association, at their annual meeting, changed the name to the Ceramics and Stone Safety Association of Ontario. J. F. M. Stewart was elected chairman and C. A. Millar, vice-chairman. The directors are: Wm. Burgess, Don Valley Brick Works; M. F. Gibson, Interlocking Tile Co.; Chas. A. Millar, Ontario Sewer Pipe Co.; J. S. McCannell, Milton Pressed Brick Co.; F. B. McFarren, Interprovincial Brick Co.; Col. Wm. Cowan, Luxfer Prism Co.; George H. Gooderham. St. Mary's Cement Co., and J. F. M. Stewart, Point Anne Quarries.

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WHAT RESEARCH MEANS TO THE CLAY MAN

(Continued from page 458)

be proud of the manner in which research is to be carried on, but we must not forget that research for its own sake is nothing. Research is a means to an end, not an accomplishment by and for itself. The fact that we have appealed to research for enlightenment means that we recognize the existence of problems which may not be solved except as the most complete information is made available. We therefore meet the first requirement of a successful research program—namely a clear, well-defined idea of our problems.

Competition Getting More and More Keen

It is scarcely necessary to dwell upon our problems here. Suffice it to say that the whole clay products industry is operating in a highly competitive field. For years whatever prosperity has come to the industry as the by-product of its service to the community, has come thru the recognized merits of its product. Operating in many units from small to large, in all sections of the country, much has been done in an individual way that has contributed to the upbuilding of successful companies. But taken as a whole, the clay products industry is not regarded as one of the generous dividend earners among the country's industries.

The markets of the clay products industry are not stable ones. The securities of the clay products industry command no such market as is open to many smaller and less important industries. To an amazing extent, the industry is financed on the personal credit of its officers rather than upon the records of the companies themselves. So long as freight rates and fuel were cheap, it was possible to sell. over a period of years, clay products for various uses without much consideration of production economies or the refinements of production economies. That period of our history is passed now. We are in a period of high freight rates and while reductions may be forthcoming before long there will not be recessions sufficient to carry us back to the old basis.

Costs Increased Enormously

The clay products industry is now consuming approximately \$4-coal where it used to burn \$1 to \$1.50-coal. On the average it is paying wages to common labor of \$3 to \$4 a day instead of \$2. All these items of expense, large as they are in proportion to the cost of producing burned clay products such as ours, mean increased production costs and following that increased selling prices. The public is comparing these prices with old or let us say, pre-war prices, and the prices of substitute materials. Without further reference it is clear that the great problem of the clay products industry is to increase production and decrease costs. These items are scarcely a matter of choice—they are matters of vital necessity and upon how much we can accomplish in this direction depends in large measure the economic future of the industry.

We are face to face with the inexorable law of distribution, namely: the prize goes to the industry which can furnish what the buyer regards as the greatest value for his money. If we expect the market of the country to absorb an increasing production of clay products then obviously the buyer must feel that what he pays for clay products is returned to him in service.

This means that it devolves upon the clay industry, in its own interest, to keep the advantages of its product increasingly impressed upon the mind of the actual and potential buyer.

Education, and more of it, is vital. But with education must come our ability to deliver to the buyer what he wants at prices regarded by him as proper—otherwise it is a waste of time for us to call him a buyer.

Work for Lower Prices to Consumer

All this is but another way of saying that every dollar spent unnecessarily on production and distribution is a drag on the ability of the industry to market its output. There is a limit to the time during which one may spend more than one receives and ruin lies at the end of the road. By the same token business can not long be done at a loss—without coming to the end of the road. Backed by the pressure of these circumstances and urged on by the pressure of competition of substitute materials, the clay products industry may not turn its back upon any activity which promises relief from these two pressures. And that relief rests in a lower price to the consumer.

Look at the situation from another angle: Any cost of production that may be reduced without interfering with the quality of the material or without restricting production should be dealt with as a thief of profits, for such it is. If the amount of fuel used in burning our product can be reduced without impairment of quality—if possible with an attendant improvement in quality—then the effort should be made.

Research Work Already Shows Results

Research such as we are now engaged in takes on a clearer significance when it is given its proper setting. This program is specifically devised to strike at one of the principal costs of producing our product. Already there are indications that from 10 to 15 per cent. of the fuel now used may be saved in equipment that today, if indications are true, is wasting that much fuel. This is some gain. It is a worth while gain. But let us not be content to stop at this point.

What would happen if we were to carry the present research idea thru to its logical conclusion? In the first place we will not stop our studies when we have completed the investigation of the 20 different types of kilns that are contemplated. We will do as must be done before any program of research may be successful, we must call in question every operation in the industry that contains any possibility of reducing costs. The research mind is fundamentally a dissatisfied mind. It takes nothing for granted. It assumes that however traditional any custom or operation may be that there is a better way of handling a given situation of some improvement in operation that may be devised. True, it may come about that the most carefully studied research program may fail to disclose any improvement that may be effected. On the other hand no improvement can be found unless it is sought. And the benefit of an improvement certainly justifies the search.

Men with Knowledge Should be Retained

It will be a reflection upon the good judgment of this industry if the men now engaged in our research work in the field are lost to the industry when they have completed what they are now doing. Let us assume for a moment that all research work were to stop when the kiln studies

Mr. Clay and Brick Manufacturer

Read every word of the following letter received from the McFeely Brick Company, Bolivar, Pennsylvania:

"And note that you would appreciate our giving you the reasons why Gravity Conveyors are a good thing in a brick plant, or, perhaps I should say the reasons why I believe them to be such."

Reason No. 1

"I can handle brick or other clay products for less money. I believe I am safe in saying that one can save from 25 to 50%, governed by the class of product and conditions.

Reason No. 2

"I can handle products such as face brick, etc., that will not stand rough handling, at a decided saving or reduction in breakage that is frequently due to the turning over of barrows and trucks, and the breakage that occurs from wheeling over rough paving, etc.

Reason No. 3

"I can get results, both quality and quantity, with a much less efficient class of labor than is required by the old method. Can use the green emigrant, old men, boys, and even women and girls, if necessary, when labor conditions are such that it is next to impossible to get the better class of labor. And even if you could get them, the wages they demand are prohibitive.

Reason No. 4

"I can handle decidedly more products in a given time, thereby emptying kilns in less time, the quicker turnover greatly increasing the capacity of the plant."

"Write for descriptive catalog"

Standard Conveyor Company

NORTH ST. PAUL, MINN.

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are completed—that no more work is ready. In that case there will be a small group of men who by virtue of their two years work have an intimate knowledge of the burning of clay products in numerous ways. Will the industry permit these men to get away from it? Will the industry be willing to let the value of their knowledge to the industry be lost or will the industry find a way to take advantage of their knowledge? Gentlemen, the answer to the question is obvious.

Again, what plan will be forthcoming for the application of the information which is now being secured to the everyday problems of the industry. It is one thing to find out how to burn brick at less expense. It is another thing to do it day in and day out. But it must be done and a way must be found to do it.

Must Apply Science to Clay Industry

I do not want to seem panicky on this subject of economical production because I recognize fully the good work which has been done in the past to bring the clay products industry to its present estate. But I do want to go on record as saying that from now on, the clay products industry must harness science to its purposes if it is going to survive, much less grow, but I should like to picture to you some of the possibilities dormant in the work we are now doing—possibilities that might become realities at a cost well within the ability of the industry to pay for it.

I should like, at the proper time, to see the work of research extended. I should like to see it amplified to become a study of the wastes of the clay products industry. Is there any man in the business who is prepared to say that the ultimate advance has been made in the methods of clay products manufacture? Are we doing the best we shall ever do? To my mind there is a great field of study which is now only being scratched. Let us muster all the courage at our command and set to work upon the broader field. I believe it is coming. I am confident that the work of this program will prove ample justification for more and better work. I am sure that a force has been introduced into the clay products industry—an active force—that will continuously thru the years have an increasing influence upon the affairs of the industry for its betterment. To have been a part of the industry at the initiation of this effort will, as time goes on, seem less of a duty and more of a privilege.

* * *

THE BUILDING SITUATION

(*Continued from page* 459)

Building operations at Wilmington, Del., in February, show a big increase over the same month of a year ago, totaling $952,000. March work is recording similar progress, and it is expected that the $1,000,000 mark will be reached this month.

Common brick is around the $20 mark, delivered, with still lower quotation likely to prevail during the spring season. Fire brick is $75, and face brick $45 and $50.

Increase at Baltimore

February records of the building department at Baltimore, Md., show an advance of well over 100 per cent., as compared with the same month of last year. The first two months of 1922 show permits about 15 per cent. greater in number than for the same period of last year, and an increase of 145 per cent. in valuation. The average is now well over $3,250,000 a month.

Carload lot brick at Baltimore is priced at $20 a thousand, as compared with a price of $25 at this same time in 1921. A slight increase is made for delivery, depending upon the length of haul. Hollow tile is $140 a thousand, wholesale, 4x12 inch, and $250 for eight inch material.

Pittsburgh Looks For Big Boom

The expected is developing in the building industry at Pittsburgh—contractors are already having trouble securing men, and some say that the shortage shows signs of becoming positively serious and predict an enormous shortage of labor when the Spring season opens up and building activities become even more pronounced than they are now. It is said that it is folly to figure on local building costs declining further, at least until the building rush subsides and that it has by no means reached its peak yet. It is claimed that the present rush exceeds any previous one in the history of the city, and is only yet in its infancy.

During February the estimated cost of the work for which permits were granted amounted to more than three times as much as that of the same month last year. Added to this, the announcement was made that the Mellon National Bank will build a new building to cost $3,000,000, work to commence the first of April and on top of that comes a statement of the Board of Education that there will be $3,000,000 worth of school construction started within the next few months.

Reports show that thruout the outlying towns, building and construction work of all kinds show the same improvement as in the city. Work estimated at several million dollars is now going on and new projects are constantly being proposed and carried into effect.

Columbus Outlook Promising

Manufacturers and dealers in all kinds of clay products in Central Ohio territory believe that trade will be fairly active this spring. This applies especially to face and common brick, hollow building tile and fireproofing. Prospects for building are unusually big and one of the features is the large number of big building projects. Foremost among these are the Rickley Memorial Building at the Masonic Home, Springfield; three high school buildings, Columbus; several new buildings on the grounds of Ohio State University, Columbus; large factory and administration building for the H. C. Goodman Co., Columbus; two large apartment houses, Columbus; half million dollar hotel at Marion; Y. M. C. A. building to cost $800,000, at Columbus and many others.

Construction at Cincinnati

The home building industry in Cincinnati, Ohio, is becoming more active, judging by the large number of permits which are being issued and announcements by architects and realty men of large operations they propose to start this spring or as soon as the weather opens up.

In four days in the week of March 5, the building commissioner issued nine building permits for the construction of as many homes and announcements were made of two other large operations which will call for the construction of 50 or 60 more homes. The G. A. Peters Realty Co. has just announced that it will start work this week in Winton Place for the construction of 24 new homes. A large group of residences, about 48, will be built by Frank G. Hamer, in Camp Washington.

Several large building projects announced recently are:

Construction by the United States Government of a building for parcel post purposes to cost $1,250,000; new school at Hartwell to cost $250,000. Plans for this structure are now in the hands of the building commissioner; first wing of the new dormitory at the University of Cincinnati to cost $250,000. Bids are now being taken on this work.

Labor Difficulty Slows Up Cleveland

Building in the Cleveland district is practically at a standstill because of the labor situation. While it is true that some work is being done in spite of the fact that both the labor and the contractors' organizations are at odds, few new projects are being started.

Hopes for a speedy readjustment of difficulties are not enter-

Gandy is a Finished Belt When You Buy It

THE installation of Gandy Belt is insurance against operating troubles from stretching.

The stretch is taken out before it leaves the factory. The belt is subject to thousands of pounds of "pull," is allowed to season and comes to you a finished product, giving maximum service with minimum stretch.

The same exacting care which is followed throughout, marks this important step in the manufacture of Gandy, the original cotton duck belt.

The stitched cotton duck belt industry began in 1880 with the manufacture of the first Gandy Belt. For forty years, Gandy Belting has held its position of leadership in the industrial field. It is the world's standard.

Gandy superiority is your protection. For driving, for conveying, for elevating—under all kinds of working conditions, Gandy proves its worth by longer wear and better service Gandy Belt is best in the brick and clay industries where maximum wear is demanded.

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CHICAGO: 552 WEST ADAMS STREET

GANDY
STITCHED COTTON DUCK
BELT

Photograph of G. T. M.-specified Goodyear Conveyor Belt in service at the dock of the Zenith Furnace Company, Duluth, Minnesota

Six Years of Service—and the G. T. M.

One of the best examples of the sincere service which is furnished on Goodyear Belts before, during and after application is offered in the story of the Goodyear Conveyor Belt of the Zenith Furnace Company, of Duluth, Minnesota. In making its present record for both age and tonnage, under the severe climatic conditions it is called on to endure, this great belt has had the benefit of a scientific service that is exclusively Goodyear in kind and quality.

The first service given on this belt was provided before the belt itself was built. The G. T. M.—Goodyear Technical Man—began it with his study of the Zenith Furnace Company's conveying problem and operating conditions. He noted the requirement for speed in the unloading of coal from the ships arriving at the Company's dock—ships that value their time on a demurrage basis of $1,000 per 8-hour day! He calculated the effect of the sudden atmospheric changes to which the belt would be exposed, together with the cold of the Northern winter through which it must lie idle.

His original recommendation called for a specially constructed Goodyear Conveyor Belt that would cut the unloading time in half, withstand the severe weather conditions, stand up under the abrasive action of the coal, save time, save labor, save money.

Goodyear Service attended the application of this belt. Goodyear engineers were present with the G. T. M. during the installation, seeing to it that everything was properly arranged for its most efficient operation.

Now this belt has served through six seasons. It has carried 2,500,000 tons of coal. Superintendent Collins and Dock Manager Applehagen of the Zenith Furnace Company say it has returned its first cost many times over in the money it has saved. The G. T. M. has inspected it regularly, at frequent intervals.

The service on this belt is typical of the service Goodyear furnishes on every Goodyear Conveyor or Transmission Belt. This Goodyear Service is available for your plant. For further information about it, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

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tained by either side, altho a conciliation board will probably be named by joint committees within the next week. Meanwhile every effort is being made by outside interests to force a settlement. Contractors believe that local wage scales are out of all proportion, and have announced their determination to fight to a finish. Labor bases its hopes on the great amount of building already authorized, and union leaders believe that the contractors will be forced into submission.

An effort on the part of the American Plan Association to have the Building Trades Employers Association consider establishing open shop resulted in a statement by D. L. Hoopingarner, secretary of the latter association, to the effect that such a move was not contemplated, and would not be considered at the present time.

The Chicago Conditions

Construction in Chicago still awaits settlement of the labor difficulties and this must be accomplished before there can be any prospect of any great amount of building. The day of settlement of the dispute seems to be as far off as ever. Chicago business men are unanimously backing the Citizens' Committee to enforce the Landis award, and no work of any consequence is going on in the city except under wages and conditions imposed by the Landis award. The committee is prepared for a fight to the finish, and it seems as tho in this instance labor will have to conform to the terms stipulated in the Landis agreement. The inevitable warfare has started and in one instance a non-union plumber was attacked and severely injured by sluggers.

This labor controversy has not, however, stopped building entirely, and the building commissioner's office daily issues a goodly number of permits for home and apartment construction.

In Minneapolis

Building permits issued in Minneapolis, Minn., for the first two months of this year exceed in amount the permits issued for the corresponding period in 1921. Up to March 1 of this year there were issued 565 permits for construction amounting to $2,032,340 as compared with 598 permits for buildings costing $1,734,335 in January and February, 1921.

The February showing for this year, however, was not so good as for the corresponding month last year. Permits last month numbered 275 and the amount was $736,840, while in February, 1921, 351 permits were issued for construction amounting to $1,354,855.

March is getting away with a flying start, more than $100,000 of permits having been issued up to noon the first day.

Much Building Ahead in South

Construction contracts awarded in the South during February approximated $35,800,000. In addition to this, initial announcements were made of projects which will necessitate an investment of approximately $91,000,000. Miscellaneous enterprises held first place in contracts awarded, totaling $13,871,700 for February. Roads, paving and bridge contracts amounted to over $9,000,000, while school buildings approximated $3,000,000. The total amount of miscellaneous enterprises projected is $21,871,292, and $11,350,000 of school buildings are contemplated.

San Francisco Not Very Active

Following the most active month for many years, the weather conditions of February have helped in keeping the trade rather below average, in San Francisco. The feeling prevails that the building projects immediately ahead and fully determined upon are such as to assure a more than ordinarily prosperous season. While the building permits of February as a whole were comparatively small, the latter end of the month has shown decided activity.

Prices quoted for clay materials in San Francisco are:

For common brick, $15.50; hollow building tile, 4 inch, $60, 8 inch, $108, fire brick No. 1, $55.75; face brick, $50 and $52.50; partition tile 4x12, $108; 8x12, $247.75; paving block, $50.70.

Machinery and Equipment

Descriptions of Machinery and Accessories and Detailed Announcements that Our Advertisers Believe Will Interest Our Readers

---

Albert Potts, who was for many years a member of the C. & A. Potts & Co., of Indianapolis, Indiana, manufacturers of clay working machinery, is now in the employ of the Lancaster Iron Works, Inc., main office, Lancaster, Pa.

Mr. Potts will sell their products thruout the west, and undoubtedly many of his old friends will be interested to learn of his new connection, and glad of the opportunity to renew his acquaintance. He can be addressed either in care of the Lancaster Iron Works, Lancaster, Pa., or to his home address, 1002 East 52nd St., Indianapolis, Ind., which will be his headquarters.

* * *

IMPORTANT ADDITION MADE TO ROBINSON LINE

Frank H. Robinson, 918-920 Behan St., N. S., Pittsburgh, Pa., manufacturer of dryer cars and clay-working equipment, has taken over the manufacture of the line formerly built at Columbus by the Ceramic Engineering Company, including their Rota-Vibra Screen. The line includes, in addition to the Rota-Vibra Screen, piano wire screens, clay feeders of disc and reciprocating types, transfer and clay cars and conveyors.

New literature describing all this equipment will soon be ready for distribution.

* * *

IT'S THE "ERIE STEAM SHOVEL CO." NOW

Editor,
Brick & Clay Record,
Chicago, Ill.
Dear Sir:

We would appreciate your announcing in Brick and Clay Record that our name has been changed from Ball Engine Company to ERIE Steam Shovel Company.

This change was made because of the fact that the undivided capital, energy, and full plant capacity are now devoted exclusively to the production of ERIE Steam Shovels and Cranes, the engine business having been sold to permit our entire manufacturing facilities to be used for building steam shovels and cranes.

Even in face of the discontinuance of the manufacture of the wellknown "Ball" steam engines for power plant use, about two years ago, it has been necessary to more than triple our plant capacity in the past six years to take care of shovel and crane business. This enlarged plant is now running day and night—full force on each shift.

Will you kindly make it clear in your article that there has been no change whatever in the assets, policies, management or personnel of the Ball Engine Company—the change is in name only, to provide a corporate title more in keeping with our present exclusive activities.

ERIE STEAM SHOVEL CO.
(Formerly Ball Engine Co.)
(Signed) Morton Eschner.
Advertising Manager.

Altho the Capacity of This Plant Has Been Tripled Within the Past Six Years, It Is Running Day and Night to Keep Up with Orders for Erie Steam Shovels and Locomotive Cranes.

Reducing the Cost of Drying Dipped Dinner Ware

The Maddock Pottery Co., Trenton, N. J., manufacturers of "Lamberton" China, recently installed a

"HURRICANE" Automatic Mangle

in order to reduce their drying costs, and at the same time improve the high quality of their ware.

It is interesting to note the efficient work accomplished since the installation of this machine. The use of a continuous, automatic process greatly decreases the cost of handling, and also eliminates much finger marking and scarring. In proportion to the amount and quality of ware turned out, the cost of steam and power is remarkably low.

Shall we send you our new folder on modern Ceramic Drying Methods, or have an engineer to call and go over your particular problem with you?

The Philadelphia Drying Machinery Co.
3351 Stokley Street Philadelphia, Pa.

Trade Names Now in Use
on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.

ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.

ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.

ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.

ARKATEX—Southern Building Products Co., Little Rock, Ark.

ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.

ART-TEX—W. E. Loomis, Sherbrooke, P. Q.

ARTISTICO—Capital Clay Co., Des Moines, Ia.

ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.

ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.

BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.

BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.

BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.

BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.

BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.

BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.

BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.

BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.

CALEDONIAN—Fiske & Co., Inc., Boston and New York.

CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.

CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.

CLAYTEX—Walton N. Cable, New York City.

CLOISTER—Western Brick Co., Danville, Ill.

COLONIAL—Capital Clay Co., Des Moines, Ia.

CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.

CORALTONE—Harris Brick Co., Zanesville, O.

CORALROSE—Harris Brick Co., Zanesville, O.

COLUMBIA—Columbia Clay Co., Columbia, S. C.

CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.

CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.

CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.

CROWN—Green Fire Brick Co., A. P., Mexico, Mo.

DENISON—Mason City (Ia.) Brick & Tile Co.

DE LUXE—The Standard Brick Company, Crawfordsville, Ind.

DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.

DORIC—Western Brick Co., Danville, Ill.

DUNBAR—United Refractories Co., Uniontown, Pa.

EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.

E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.

ELKCO—Elk Fire Brick Co., St. Marys, Pa.

ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.

ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.

EMBOSTEX—Streator (Ill.) Brick Co.

EMPIRE—Green Fire Brick Co., A. P., Mexico. Mo

EMPIRE—The Minor Fire Brick Company, Empire, Ohio.

EMPIRE—Western Brick Co., Danville, Ill.

EVERHARD ANTIQUE—Everhard Co., Massillon, O.

EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.

EVERHARD DOUBLE-TEXTURE—Everhard Co. Massillon. O.

EVERHARD FERN-LEAF—Everhard Co., Massillon. Ohio.

EVERLASTING—Mason City (Ia.) Brick & Tile Co

FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.

FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.

FISKLOCK—Fiske & Co., Inc., Boston and New York.

FRASERCLAY—Fraser Brick Co., Dallas, Texas.

F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.

F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.

F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.

FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.

FROSTBURG ROUGH TEXTURE—Savage Mountain Fire Brick Co., Frostburg, Md.

FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.

FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.

FULTONHAM-TEXTURE — Fultonham-Texture Brick Co., East Fultonham. Ohio.

GLONINGER IRON SPOTS—Gloninger & Co., Pittsburgh, Pa.

GOTHIC—Western Brick Co., Danville, Ill.

GREENDALES—Hocking Valley Pro. Co., Columbus, O.

GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.

GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.

GRID—Fiske & Co., Inc., Boston and New York.

HAWK-I-TEX—Capital Clay Co., Des Moines. Ia.

HAYES RUN—Hayes Run Fire Brick Co., Orviston, Pa.

HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston, Pa.

HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.

HI-GRADE—Southwest Building Supply Co., Springfield, Mo.

HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.

HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.

HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.

HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.

INTERLOCKING TILE—Fraser Brick Co., Dallas. Texas.

IRONCLAY—Iron Clay Brick Co., Columbus, O

IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.

KELSO—Hayes Run Fire Brick Co., Orviston, Pa.

KEYSTONE—Elk Fire Brick Co., St. Marys, Pa.

LADLE—The Zoar Fire Clay Company, Zoar, Ohio.

LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.

LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.

L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.

LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.

LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.

M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.

MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.

METALTEX—Columbia Clay Co., Columbia, S. C.

MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.

MINOR—The Minor Fire Brick Company, Empire, Ohio.

MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.

MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.

MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.

MOBRIQUE—Harris Brick Co., Zanesville, O.

MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.

MOSAIC—Western Brick Co., Danville. Ill

NATIONAL—The National Fire Brick Company, Strasburg, Ohio.

NO. 1—J. H. Gautier & Co., Jersey City, N.

NUVOGUE—Boone (Ia.) Brick, Tile & Pa Co.

OIL—J. H. Gautier & Co., Jersey City, N.

OLD HOMESTEAD—Burton-Townsend C Zanesville, Ohio.

OLD ROSE COLONIAL—Montezuma (Ind Brick Works.

OLEAN BLOCK—Sterling Brick Co., Olea N. Y.

ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.

OXFORD—Southern Brick and Tile Compan Louisville, Ky.

PASTELS—The Standard Brick Co., Crawfordsville, Indiana.

PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.

PERSIAN SPLIT—Thomas Moulding Bri Co., Chicago, Ill.

POS-TEX—Poston Brick Co., Springfield,

POTOMAC-SAVAGE—Savage Mountain Fi Brick Co., Frostburg, Md.

"POTTRY"—B. Mifflin Hood Brick Co., lanta, Ga.

PROMENADE—Yingling-Martin Brick C Johnsonburg, Pa.

RAINBOW — Burton Townsend Co., Th Zanesville. Ohio

RED ROCK RUFFS—Auburn Shale Brick C Auburn, Pa.

ROTEX—Elk Fire Brick Co., St. Marys, Pa. Gettysburg. Pa.

ROYAL HA-SIERS—Decatur Brick Mfg. C Decatur, Ill.

RUBYTEX—Columbia Clay Co., Columb S. C.

RUFTEX—Thomas Moulding Brick Co., C cago.

RUG—Hocking Valley Pro. Co., Columbus,

RUSTIQUE ORIENTAL—Martinsville (In Bk. Co.

ST. MARYS—Elk Fire Brick Co., St. Mar Pa.

SAVAGE MOUNTAIN—Savage Mountain F Brick Co., Frostburg, Md.

SHALE-TEX—Streator (Ill.) Brick Co.

SIL-O-CEL—Celite Products Co., Chicago,

S. M.—Savage Mountain Fire Brick Co., Fro burg, Md.

S. M. A.—Savage Mountain Fire Brick C Frostburg, Md.

S. M. EXTRA—Savage Mountain Fire Br Co., Frostburg, Md.

SPECIAL—Green Fire Brick Co., A. P., Me ico, Mo.

SPEEDWAY BLOCK—Alliance (O.) Clay Pr Co.

STANDARD—Green Fire Brick Co., A. Mexico, Mo.

STANDARD—The National Fire Brick Co pany, Strasburg, Ohio.

TAPESTRY—Fiske & Co., Inc., Boston a New York.

TAVERN BRICK—Metropolitan Pav. Bri Co., Canton, O.

TEXTUR—Thomas Moulding Brick Co., C cago, Ill.

THERMO—The Crush Brick Co., Sulp Springs, Texas.

TIFFANY—Thomas Moulding Brick Co., C cago, Ill.

TORONTO—Toronto Fire Clay Co., Toronto,

TOWNSEND BLOCK—The Burton-Townse Co., Zanesville, Ohio.

TURKESTAN—Beaver Clay Mfg. Co., N Galilee. Pa.

TURKO—Rochester (Pa.) Clay Products Co

UNITED—United Refractories Co., Uniontow Pa.

U. R. CO.—United Refractories Co., Uniontow Pa.

U-TEX—Fultonham-Texture Brick Co., E Fultonham, Ohio.

VERTEX—Beaver Clay Mfg. Co., New Galil Pa.

VITRI-CRAFT—Schuylkill Valley Vitrif Products Co., Oaks. Montgomery Co., Pa

VOLCANIC—Beaver Clay Mfg. Co., New G ilee. Pa.

WATERPROOF—Gloninger & Co., Pittsbur Pa.

WIRE-CUT-LUG BRICK—Dunn Wire-Cut L Brick Co., Conneaut. Ohio.

YALE-TEX—Gloninger & Co., Pittsburgh,

ZOAR—The Zoar Fire Clay Company, Zo Ohio.

BRICK *and* CLAY RECORD

Established 1892. Now in its twenty-ninth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by

Industrial Publications, Inc.

Telephone: Harrison 9462

407 S. Dearborn St. Chicago

Branch Offices
New York Cleveland Kansas City

Address all communications to home office

Chicago, April 4, 1922
Vol. 60 No. 7

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

How the Farmer Stacks Up

ONE OF THE MOST FUNDAMENTAL indications of an early return to prosperity has occurred—the rise of farm produce prices nearer to the general level of other commodities. So long as the buying power of a large proportion of the 40,000,000 country people was out of line with the goods they bought, it was impossible for business generally to return to normal. Even the farmers who were prospering or had stored up money, would not spend money normally under such conditions.

Rise in Farm Products Prices

The rise in farm prices, which has been expected for some time by those who have been closely watching the world requirements and supplies, finally came even more generously than was expected. Cash wheat has been selling in Chicago for $1.32 as compared with an average of .935 for the first half of 1913 and 1914. Corn was recently 62c as compared with 60.2c. Hogs (corn on the hoof, the way most of the corn is sold) are now $10.80 to $8.34. Cattle average $8.30 as compared with $8.03. Butter on the farms is 34.4c to 27.5c. Eggs are 32c to 25.6c. Cotton at New Orleans is now 17c as against 12.6c in 1914. (Before the drop.) Hay on the farms is $11.36 to $10.86 in 1913.

Then the size of the crops must be considered. With practically no more farms or lands, the 1921 production of farm produce on the whole, with the exception of cotton, was considerably greater than before the war. Due to the recent price increases, the value of livestock and crops still in farmers hands is estimated to have increased $1,046,000,000.

Large Purchase in Fall

But this rise in prices is past history. In order to plan for the future, it is now necessary to know whether farm buying power will be maintained.

Our judgment is that farm people can be depended upon for a steady volume of business during this summer, and commencing with the fall, they will absorb greater quantities of goods. We look for a constantly larger increase. This steady buying by the farmers must bring better times to city workers and improve the city markets. But let us briefly tell you the facts as we see them and judge for yourself.

First as to farm finances. There has been much talk of frozen credits and the farmer's needs for credit assistance. A recent investigation of the U. S. Department of Agriculture shows that farmers with 78 billion dollars (26 per cent. of the entire national wealth) invested in land, buildings, implements and machinery alone, have borrowed only 18.3 per cent. of the entire bank loans of the United States on mortgages and personal notes. Obviously, the farmer is solvent.

Next, as to the prospect for maintained prices. The most authentic figures as to stores of farm produce indicate that the granaries of the world will be swept bare before this year's crops are harvested. Even with bumper crops in the United States, a third successive big yield in Canada and continued good crops in other sections, prices will be well maintained. Russia which supplied Europe with 12,000,000 tons of cereals before the war, is eliminated as an exporter for several years to come. Europe's ability to purchase the foods that are required is proved by the steadily rising European exchange, even while absorbing huge quantities of our farm produce during the past year and at this time. As long as they can buy, they will buy food first.

Increased Farming Efficiency

Future farm profits will be larger because great strides have been made in farming efficiency. More and better machinery and better trained operators have largely increased individual productiveness. Fewer farm workers produced more farm produce than before the war. Better seed and better livestock largely increase the returns from farm labor and feed. Wages of hired labor have been much reduced.

Farmers will profit financially, socially and mentally, thru farm cooperative movements which have made tremendous advances both in extent and in management. Such organizations as the California Fruit Growers' Exchange and the National Dairy Council furnish patterns of intelligent development of markets thru advertising, better produce, proper grading, waste elimination and improved transportation. Such cooperation unquestionably predicates better prices for farm produce, together with lowered costs to consumers which will maintain the demand.

Never have our farmers worked harder or more intelligently or with better instruction and leadership than now. Now the clouds are breaking. The time for caution is over. Fair weather is ahead. We are confident that a great and enduring success is before them. These viewpoints are based upon a survey made by the Farm Journal, a national publication.

* * *

"Brick is the Coming Thing"

THERE is considerable significance and humor in the statement, "Brick is the coming thing"—especially when it is mentioned in a conversation between two laymen. In another part of this issue is published a photograph and description of a brick display in the window of a Chicago bank. Due to the great interest in home building the window is always surrounded by a large group of interested observers.

A representative of Brick and Clay Record, while standing at the window display, overheard the conversation of two men in a crowd of about ten, strangers to each other, which was of considerable interest. One said to the other, noting the prices given, "Why, that's just about the same price as lumber would cost. You can't build a home any cheaper than that out of lumber."

"That's right," the other fellow agreed. "I just wonder how true those prices are."

"I don't think they are correct," said the first speaker. "I used to handle brick. It costs about $18 a thousand, and I know there are more than 13,000 brick in that building. At $18 a thousand it would take about 13,000 brick to make up the $240 they say the brick costs."

"I guess you're right. They probably wouldn't supply the brick to you for $240."

"Brick is the coming thing, tho," said the first speaker. "Brick homes are going to be the thing." And the other man absolutely agreed with him.

There are several significant things in the above conversation. It shows the great surprise that the layman has in the low cost of brick homes. It also shows his ignorance in brick prices. (Brick are quoted at $12 per thousand in Chicago.) It proves the necessity of promoting the use of brick, not so much because of its beauty, durability, and so forth, but because it can be had for such low cost. It is the low cost feature that the public considers of prime importance. The idea of mentioning the cost of the brick required in the home shown in the display is a splendid feature that helps put across the message for brick.

Aside from the above features, the statement, "Brick is the coming thing," is well worth noting. It appears that the advertising campaigns being conducted by the various associations are proving quite effective.

Statistics on Home Building Costs

Comparative House Construction Costs—Volume of Building—Prices of Materials—Trend of Building Costs

DURING THE LAST TWO YEARS of the war the volume of residential construction was far below normal. A short lived spell of active building occurred during 1919, followed by an abrupt decline in 1920. While this decline affected every class of construction, its results were brought home most vividly to the average community thru the nation-wide housing shortage which inevitably followed the cessation of building.

The detailed figures together with Chart 1 present a comparison of the cost of building a home in 1914 with the cost of the same building in 1920, at the peak of the high price wave, and in March, 1922. The figures are for three different types of residences, showing in each case the change in the various elements in labor and material costs.

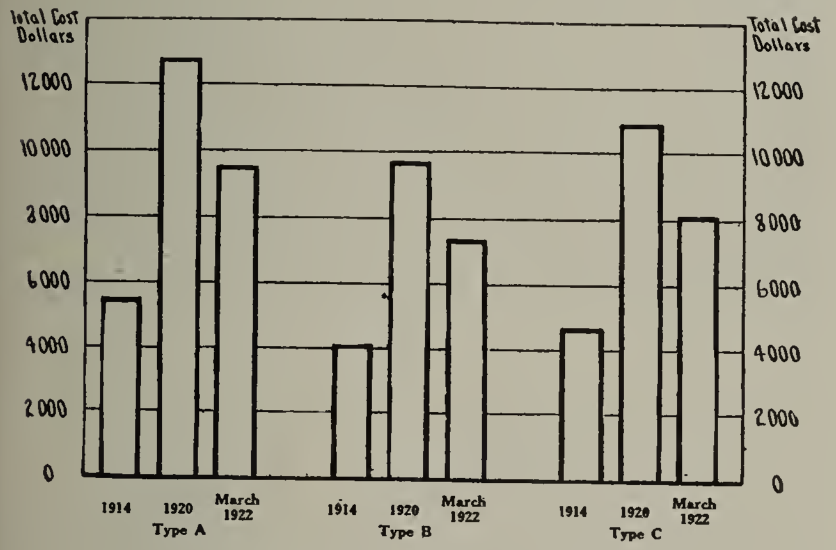


Chart No. 1. A Comparison of the Cost of Building a Home in 1914, 1920, and March, 1922.

The Rise and Fall of Costs

A home of Type A cost in 1914 $5,529, in 1920 the same home cost $12,815, an increase of 131 per cent. in relation to the 1914 figure. In March, 1922, such a house would cost $9,502, 71 per cent. more than the 1914 cost, and 26 per cent. below the maximum cost in 1920.

TYPE A

2 Story Frame House, 7 Rooms, Size 30 ft. by 34 ft.
Contents 29,100 cu. ft.—Floor Area 2,640 sq. ft.

	1914	(Peak) 1920	March 1922
Excavation	$ 240.00	$ 420.00	$ 420.00
Foundations and Cement	470.00	1,459.00	1,167.00
Masonry	250.00	667.00	543.00
Plastering	359.00	962.00	809.00
Carpentry and Glass	2,520.00	5,629.00	3,845.00
Painting	320.00	608.00	560.00
Plumbing and Gas	350.00	686.00	517.00
Heating	400.00	1,029.00	712.00
Metal Work	180.00	455.00	291.00
Tile Work	40.00	87.00	54.00
Mantels	80.00	173.00	109.00
Electric	250.00	500.00	377.00
Hardware	70.00	140.00	98.00
	$5,529.00	$12,815.00	$9,502.00
Cost per cu. ft.	$0.19	$0.44	$0.325
Cost per sq. ft.	2.09	4.85	3.60
Per cent. of change	100%	231%	171%

The cost of a home of Type B in 1914 was $4,176. To build such a house in 1920 cost $9,767, 133 per cent. above 1914 costs. The present cost of this home is $7,374, which is 76 per cent. above 1914 prices and 24 per cent. below the maximum cost.

TYPE B

2 Story Colonial House, 8 Rooms (Incl. 2 Attic Rooms)—Size 23 ft. by 41 ft.
Contents 25,315 cu. ft.—Floor Area 2,530 sq. ft.

	1914	(Peak) 1920	March 1922
Excavation	$ 160.00	$ 280.00	$ 280.00
Foundations and Cement	410.00	1,273.00	1,018.00
Masonry	258.00	689.00	560.00
Plastering	385.00	1,031.00	868.00
Carpentry and Glass	1,030.00	2,301.00	1,571.00
Painting	304.00	577.00	532.00
Plumbing and Gas	340.00	666.00	503.00
Heating	420.00	1,081.00	748.00
Metal Work	187.00	473.00	302.00
Tile Work	126.00	274.00	171.00
Mantels	60.00	130.00	81.00
Electric	420.00	840.00	634.00
Hardware	76.00	152.00	106.00
Total Cost	$4,176.00	$9,767.00	$7,374.00
Cost per cu. ft.	$0.165	$0.385	$ 0.29
Cost per sq. ft.	1.65	3.86	2.91
Per cent. of change	100%	233%	176%

The 1914 cost of a Type C home was $4,701, which by 1920 had risen to $10,913, a figure 132 per cent. above the earlier cost. The cost of erecting this house in March 1922, is $8,112 or 72 per cent. above the 1914 cost and 26 per cent. below the peak cost.

TYPE C

2 Story Shingle House, 8 Rooms (Small)—Size 26 ft. by 35 ft.
Contents 24,360 cu. ft.—Floor Area 2,385 sq. ft.

	1914	(Peak) 1920	March 1922
Total Cost	$4,701.00	$10,913.00	$8,112.00
Cost per cu. ft.	$0.193	$0.448	$0.333
Cost per sq. ft.	2.00	4.64	3.68
Per cent. of change	100%	232%	172%

The rise in prices and wage increases between 1914 and 1920 more than doubled building costs between those two dates. The subsequent decline, while not sufficient to restore costs to the old level, has brought about a very material decrease in construction costs, the fall in costs in two years amounting to 25 per cent. of costs at the peak.

The prospective builder is, of course, interested in knowing whether he may look for further declines, for which he should wait. General wholesale prices, as measured by the index number of the U. S. Bureau of Labor Statistics, seem to be stabilized at a level about 50 per cent. above that of the pre-war period. Building costs are above this level, but many of the elements which bulk large in building costs, such as freight rates and wage rates, are less susceptible to downward revision than are commodity prices in general. The general housing shortage, and the increasing volume of building at present price

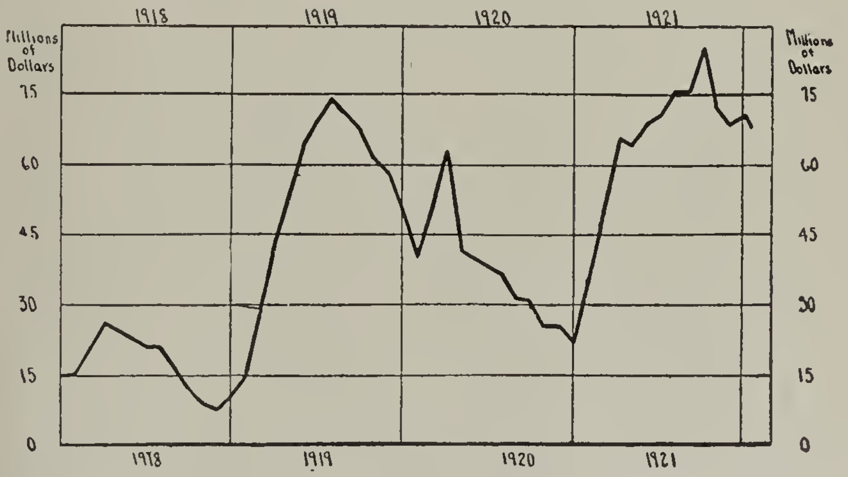


Chart No. 2. Value of Building Permits Issued—Deflated—1918-1921. (Based on Bradstreet's Reports from 163 Cities.)

Editor's Note—Reprinted from the Chemical Bulletin of March, 1922, issued by the Chemical National Bank of New York City.

levels are factors which serve to strengthen building material prices. While it is entirely possible, therefore, that building costs may decline still further, it is not probable that drastic declines will occur.

Relationship of Volume and Cost

The cost of building construction and the volume of building going on at any time are closely related. Favorable costs induce building activity, while abnormally high charges, such as those prevailing in 1920, put a check on new construction. It is of interest, therefore, to note the past trend of building and present tendencies in the matter of new industrial and residential construction.

The volume of building between 1918 and 1922, as measured by the value of building permits issued in 163 cities in the United States, is shown on Chart 2. This chart is based upon reports summarized in Bradstreet's. The value figures there given have been deflated, that is, corrected so that changes in the price level between 1918 and 1922 would not distort the results. The curve there shown gives a true picture of the actual volume of building from year to year, the value of the buildings erected in each year being expressed in terms of 1914 dollars.

It is clear that the post-armistice boom brought a revival of building, as well as a revival in business activity generally. This building boom came to a head, however, in 1919, somewhat earlier than the prosperity in most business lines. With the exception of a slight recovery in 1920, building activity declined steadily between August, 1919, and January, 1921. The year 1921 witnessed a distinct revival in building activity and the latter part of that year found the actual volume of new building equal to that of 1919. The first two months of 1922 brought a slight falling off, tho they were far in excess of the same months for previous years.

Relative Prices of Four Materials

The general discussion of construction costs may be made more concrete if the prices of specific commodities are considered. Chart 3 presents a comparison of the relative prices of four important building materials in 1920, and in March, 1922, average prices in 1914 being used as a basis for measuring price charges. The commodities represented are Portland cement, yellow pine timber, common brick, and steel beams. These are taken as typical building materials. The prices of cement and common brick upon which these relative figures are based apply to materials delivered at the building site, in New York. Prices for yellow pine timber and steel beams are f. o. b. New York. Freight charges are thus included in all cases, and cartage charges for brick and cement. The inclusion of these charges makes the record representative of the actual cost to the builder, tho inaccurate as a measure of actual material price changes.

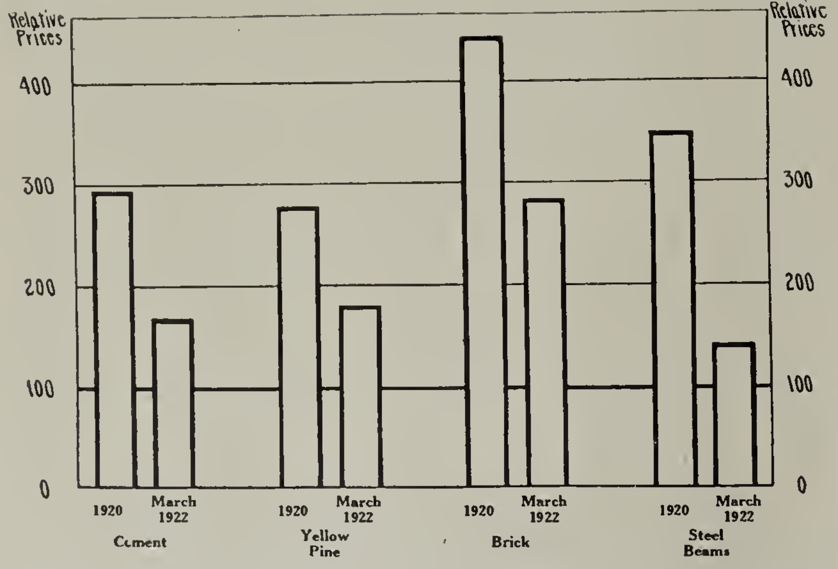


Chart No. 3. A Comparison of the Relative Prices of Important Materials in 1920 and in March, 1922. (1914 Average Prices Equal 100).

When the comparison is made on this basis, rather striking divergencies appear. At the peak in 1920 brick prices were far higher than those of any of the other materials here shown, being 440 per cent. of 1914 prices. Steel beams stood next in order, while yellow pine timber showed the smallest rise. In March, 1922, the relative price of common brick stood higher than the prices of the other materials, while beams showed the lowest relative price. Part of this difference, it should be noted, is due to differences in freight charges, which constitute a quite important item in the cost of such bulky materials. Thus a 1914 freight charge of $3.20 on steel beams, carried between Pittsburgh and New York, had become $7.60 in 1922.

The trend of general commodity prices was upward between 1896 and 1920, and building costs followed the general course. Until 1915 the increase was gradual, with short downward swings during the years 1904, 1908, 1911 and 1914. The year 1915 witnessed the beginning of a more rapid rise, and the rate was still further accelerated in 1919 and early 1920. The latter year was the turning point, and the downward rush of prices equaled the rise of the preceding year, continuing for 12 months before any definite slackening of the fall occurred.

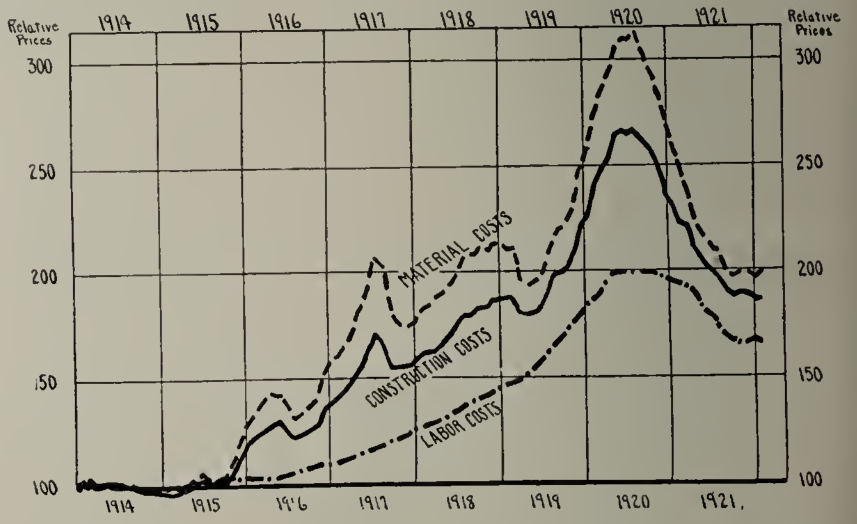


Chart No. 4. A Comparison of Materials, Costs, Labor Costs and Total Construction Costs in the Building Trades (1914 Equals 100).

Chart 4 portrays the course of general construction costs in all classes of buildings, and one of the two chief items entering into those costs, between 1914 and 1922. The three curves on the chart are based upon weighted index numbers of building material costs, building labor costs, and a combination of the two. The average costs during 1914 are taken to equal 100 in each case.

Material Prices Responsible for Rise in Construction Costs

It is apparent that the increase in construction costs between 1915 and 1917 was almost entirely due to the increase in material prices. These had doubled by the summer of 1917, while building labor costs had increased 18 per cent. The increase in labor costs continued, constituting a more important factor in later additions to construction costs. In 1920 labor costs had reached a maximum, 100 per cent. above the 1914 average. Materials costs, at the same date, were 212 per cent. above the 1914 average. At this peak which was reached in August, 1920, construction costs were 167 per cent. above prewar costs. The precipitate decline in material costs brought general construction costs down in the latter part of 1920, tho labor costs maintained their level during that year. The year 1921 brought recessions in both groups, and by February, 1922, material costs stood 98 per cent. above their pre-war average, with labor costs 65 per cent. above. The weighted average of the two, which is taken to represent the general cost of construction, was 85 per cent. above the 1914 figure in February, 1922.

It is worthy of note that there have been no marked changes in material costs or in general construction costs since September, 1921, tho there have been slight recessions in labor costs. Certain building materials have actually increased in price during the last several months. This has been due to renewed bidding for materials with the increased building activity of recent months.

* * *

TRENTON PUTS ACROSS OWN HOME SHOW

Nearly 50,000 residents of Trenton and vicinity swelled the attendance at the Own Your Own Home Exposition held at the Trenton Armory, March 6-11.

The Independent Brick Co., of Trenton, N. J., Conducted This Booth at the Home Building Exposition Just Recently Put on.

The show, which was a success in every way, was the idea of the real estate men of Trenton. The space was purchased by the different building material exhibitors and there was an admission charge of 25c to help defray expenses. But the fact that 20,000 complimentary tickets were given out shows how generous were both the exhibitors and managers of the undertaking. One of the big drawing cards was a bungalow erected in the Armory which was given away to the person holding a lucky number. It is expected that a booklet containing a complete resume of the project as well as a general description of the present conditions and outline of the construction industry in Trenton will be published later by the Real Estate Board.

The Trenton papers did splendid cooperative service in arousing interest and maintaining popular enthusiasm in the show during the week in which it was held.

Building material dealers and manufacturers were represented by several interesting and effective exhibits.

Among these particularly was the Independent Brick Co., of Trenton.

* * *

WHY BE ASHAMED OF BRICK?

In Theophile Gautier's "Russia" we find the following which is very interesting.

"It is impossible to find a city less fantastic than Berlin, and it would require a vast amount of delirious poetry to lodge phantoms in a town so clear, so straight, so correct, where the bats of hallucination would find it indeed difficult to discover a corner in which to conceal themselves. These great beautiful houses, which could be readily taken for palaces, if one may judge from their columns, their frontals, their architraves, are generally built of brick, for stone is apparently scarce in Berlin. But the brick are covered with cement or colored plaster made to simulate cut stone; false joints indicate the fictitious layers, and the illusion would be complete, were it not for the frosts of winter, which detaching the plaster, discover patches of the red brick underneath. The necessity of painting the entire facade to mask the nature of the materials used gives a highly decorative effect to the buildings when seen in full daylight. The prominent parts, such as the moldings, cornices, entablatures and consoles are of wood or cast iron, to which suitable forms have been given, and when not seen too close, the effect is excellent. To all this splendor there is lacking nothing but—sincerity.

"In London the porticoes and columns of the palaces bordering each side of Regent's Park are also of brick covered with a layer of plaster, and then painted to look like stone or marble. Why should they not be built simply of brick whose warm tone and shape are capable of furnishing a thousand delightful devices? Houses treated this way are absolutely charming, with the added advantage of being true. A make believe article always inspires a sort of distrust."

* * *

STUDY ELECTRIC FURNACE REFRACTORIES

At the Ceramic Experiment Station of the Bureau of Mines, Columbus, Ohio, a study of electric furnace refractories is to be undertaken. A study is to be made of the development of these refractories and the measurement of their electrical conductivity at different furnace temperatures. The investigation will probably consume more than a year's time.

Super-refractories should be burned at the highest possible temperature. The electric furnace would be highly desirable. Electric furnaces of various designs will be built at the Northwest Experiment Station of the Bureau of Mines at Seattle, Wash., and used in burning super-refractory shapes.

* * *

PAVING BRICK FROM COTTON STALKS

A fibre paving brick, made from cotton stalks, is to be manufactured in Memphis, Tenn., by the Stryker Kotton Wood Products Co., which is investing several hundred thousand dollars in the construction of a suitable factory. Special machinery will make this brick, the hourly output to be 3,600.

It is claimed that the brick is fire and acid proof, but can be cut by a saw and holds nails as does wood.

* * *

HOLLAND'S COOPERATIVE HOUSING PLAN

A system of housing which has been very successful in the city of Copenhagen, Denmark, is that operated by the Workers' Co-operative Building Society, which numbers over 3,000 members today. This society has been formed since the war, and has for its aim the establishing of adequate housing facilities for workers at as low a cost as is possible combined with quality. The buildings consist of 215 apartments, varying from three rooms and bath to six rooms and bath, and renting from $14 to $37 a month at the present value of the crown. Every apartment embodies the latest construction methods and is furnished with all modern conveniences. A committee of the householders takes care of all matters pertaining to the management of the building.

The society encountered much trouble in their building operations before they gained control of their own supplies, according to one of the members. They now own two brick factories which supply nearly 5,000,000 brick a year, altho this does not fill their demand. Cement trimmings, castings, and so forth are made at their own factory in Copenhagen, and other cement is bought from the cement workers' cooperative factory in Jutland. A window and door frame factory, a paint department, and a direct lumber supply are also controlled by the society.

2,000 homes have already been built in 15 buildings, and members obtain their apartments as soon as they are built in the order of application. The society has also established a colony of 98 cottages, made of stucco and brick, in one of the suburbs, which rent for 108 crowns a year, or about $40 in our money.

Business Briefs and Trend

FARM PRODUCTS PRICES GAIN

The most fundamental business change that has occurred in recent weeks is the improvement in the prices of agricultural products. With the exception of tobacco, every agricultural product for which prices are given in the "Survey of Current Business" made a substantial increase in February over the preceding month. Compared with December, 1921, the improvement is still more marked. The price of hogs in Chicago increased 45 per cent. in two months; sheep and lambs increased from 40 to 70 per cent. During the same period wheat and corn each rose about 20 per cent. Wool increased 28 per cent., while cattle and the minor cereals showed substantial gains. Cotton, altho slightly higher than in January, is still below the price attained the last quarter of 1921. Consumption of cotton has increased 20 per cent. compared with a year ago, notwithstanding widespread labor troubles in New England textile mills.

* * *

PREDICT REDUCTION IN HOME SHORTAGE

A reduction in the housing shortage of about 1,000,000 homes in 1922, is predicted by the Department of Commerce, Division of Building and Housing, after a careful study of reports of contracts awarded and the figures on building permits. Measured in floor space, average contracts awarded during the past three months stand well above the 1921 average, and very close to the high year of 1919. With such a start, the year 1922 could easily rank ahead of any year since the beginning of the war. Residential buildings have accounted for 47 per cent., or nearly half of all new construction during the past three months.

* * *

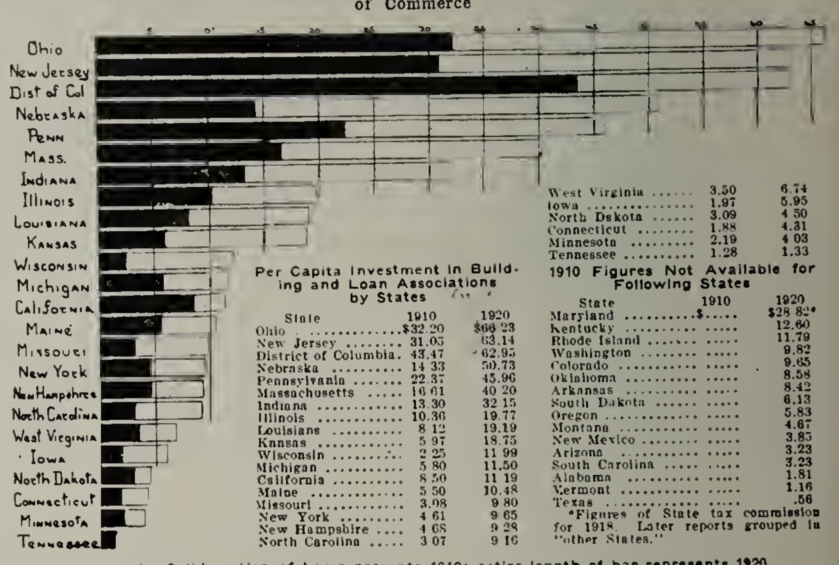
WAGES OF ARTISANS IN 100 YEAR PERIOD

In a study entitled, "Price Changes and Business Prospects," Leonard P. Ayres, vice-president of the Cleveland Trust Co., has made the following interesting computations.

One hundred years ago, in 1820, the average weekly wage of the artisans was about $7. This rose steadily during the next 40 years until it was about $10 a week in 1860, just before the outbreak of the Civil War. During the course of that struggle these wages rose from the $10 level to $15 and then kept on rising until 1869, or four years after the close of the War, when they passed $17. Then came 10 years of decline until 1879, when they were $14.74. A slight recovery lifted them just above $15 where they stayed for 20 years, or until 1900. They then rose for 15 years, or until 1915, when they amounted to $21.38, and shot up for five years during the World War, and for two years after its close, to an average of $42 in 1920.

During this entire period of 100 years the course of the wages of common labor ran along nearly parallel to that of the artisans and thruout the century their relationship to each other is such that the artisan wage is almost always about 180 per cent. of the common labor wage.

PER CAPITA INVESTMENT IN BUILDING AND LOAN ASSOCIATIONS
Chart Prepared by Division of Building and Housing of Bureau of Standards—Department of Commerce



Per Capita Investment in Building and Loan Associations by States

State	1910	1920
Ohio	$32.20	$66 23
New Jersey	31.05	63.14
District of Columbia	43.47	62.95
Nebraska	14 33	50.73
Pennsylvania	22.37	45.96
Massachusetts	16 61	40 20
Indiana	13.30	32 15
Illinois	10.36	19.77
Louisiana	8 12	19.19
Kansas	5 97	18.75
Wisconsin	2 25	11 99
Michigan	5 80	11.50
California	8 50	11 19
Maine	5 50	10.48
Missouri	3.08	9 80
New York	4 61	9 65
New Hampshire	4 68	9 28
North Carolina	3 07	9 16
West Virginia	3.50	6.74
Iowa	1.97	5.95
North Dakota	3.09	4 50
Connecticut	1.88	4.31
Minnesota	2.19	4 03
Tennessee	1.28	1.33

1910 Figures Not Available for Following States

State	1910	1920
Maryland	$.....	$28 82*
Kentucky	.....	12.60
Rhode Island	.....	11.79
Washington	.....	9.82
Colorado	.....	9.65
Oklahoma	.....	8.58
Arkansas	.....	8.42
South Dakota	.....	6.13
Oregon	.....	5.83
Montana	.....	4.67
New Mexico	.....	3.85
Arizona	.....	3.23
South Carolina	.....	3.23
Alabama	.....	1.81
Vermont	.....	1.16
Texas	.....	.56

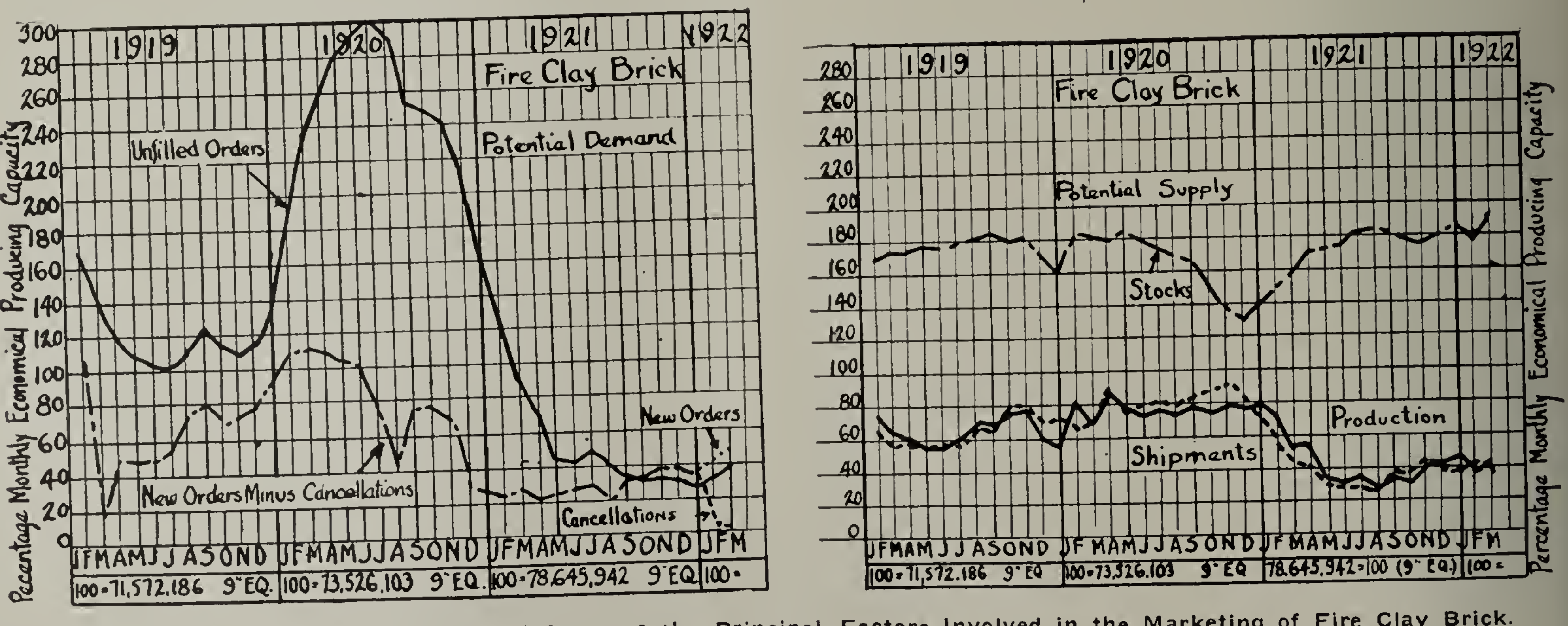
*Figures of State tax commission for 1918. Later reports grouped in "other States."

Legend: Solid section of bar represents 1910; entire length of bar represents 1920

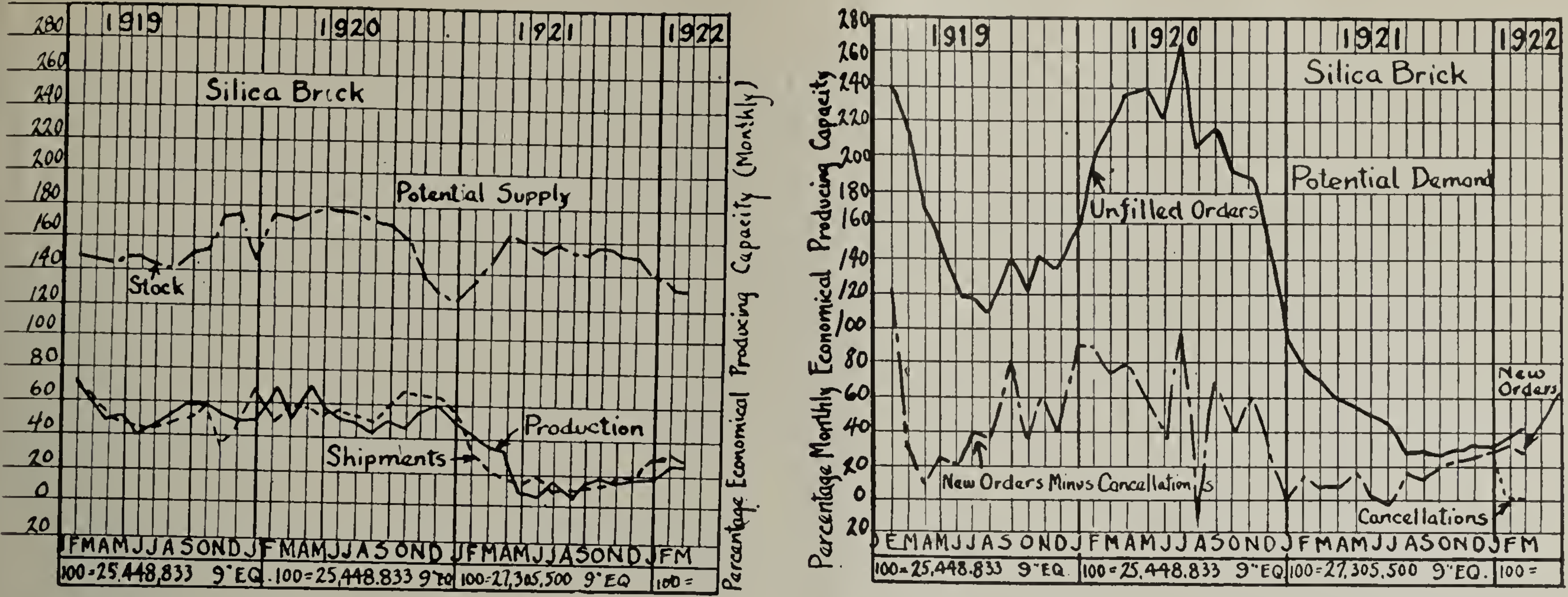
* * *

STRIKES CAUSE BILLION DOLLARS LOSS

"It has been estimated by what is believed to be competent authority that the loss from wages alone in America thru strikes and labor disputes has amounted to somewhere in the neighborhood of a billion dollars in the last 40 years,"



Comparisons from the Standpoint of Some of the Principal Factors Involved in the Marketing of Fire Clay Brick.



Market Features of Silica Brick with Regard to Relationship Between Stocks, Production, Shipments, Orders and Cancellations of Silica Brick.

said Ernest T. Trigg, president of the National Federation of Construction Industries in an address at Memphis, Tenn. "Nine-tenths per cent. of this loss has occurred in unionized activities where the employes paid heavy organization expenses, and the larger part has occurred in recent times."

⁂

BUILDERS' EXCHANGES MOVE TO IOWA

The National Association of Builders Exchanges is preparing to move its national headquarters from Atlanta, where it has been located the past year, to Webster City, Ia., according to an announcement by Earl Stokes, secretary of the organization. The action was taken at a recent meeting of the association held at Memphis, Tenn.

⁂

IDLE FREIGHT CARS DECREASE 200,000

There were 12,141 more freight cars in operation on February 23 than on January 15, showing that in 13 days there was a distinct improvement in the movement of goods. In the first two months of 1922 there has been a decrease in the idle freight cars in good order of over 200,000. These figures indicate the swing of the business pendulum.

⁂

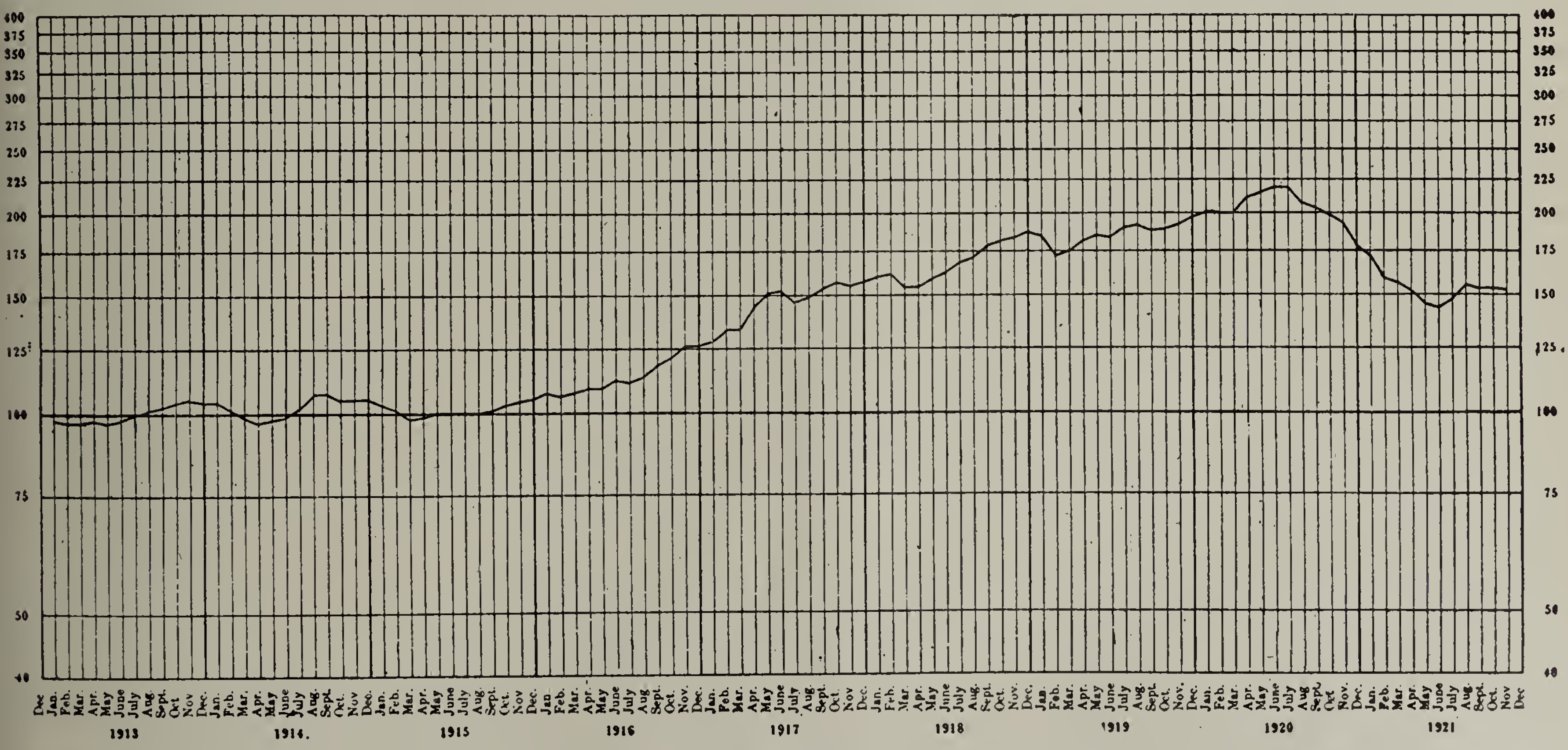
PRODUCTION DECREASED AS WAGES INCREASED

Some interesting figures have been compiled by the Associated Employers of Indiana on production in the bricklayer trade. These figures show that while wages steadily increased in the period from 1909 to 1920, the average production of the individual bricklayer decreased in almost the same proportion as the increase in wages. The figures state that bricklayers

In 1909 earned $4.40 per day and laid 1,100 brick,
In 1916 earned $5.20 per day and laid 900 brick,
In 1918 earned $6.40 per day and laid 614 brick,
In 1919 earned $8 per day and laid 587 brick,
In 1920 earned $10 per day and laid 541 brick.

TREND IN THE RETAIL COST OF ALL ARTICLES OF FOOD, COMBINED, FOR THE UNITED STATES, BY MONTHS, JANUARY, 1913, TO NOVEMBER, 1921.

[Average cost for 1913=100.]



This Curve is Taken from the Monthly Labor Review (February, 1922) of the Bureau of Labor Statistics, United States Department of Labor.

According to these figures the cost to lay 1,000 brick in 1919 was $4 and this increased until in 1920 the cost per thousand brick laid amounted to $18.50.

* * *

CLAY STANDS SEVERE FIRE TESTS

Not long ago the city of Chicago witnessed the greatest fire in its history since the historic "Chicago Fire." Flames swept thru an entire block of old buildings, leaped the width of a street into the comparatively new Burlington Building and consumed every piece of inflammable material in 6 or 7 stories. This building was of the "fireproof" variety, constructed almost entirely of clay products. It was faced with terra cotta and the interior walls, partitions and floors were all of hollow building tile. Altho many people in Chicago now scoff at the fireproof qualities attributed to this building, it is nevertheless, as it now stands, a monument to the wonderful structural qualities of clay products. The entire structure is absolutely intact; exterior and interior walls, partitions and floors are in as sound a condition as they were before the flames raged thru the building. An engineer of the Hollow Building Tile Association informs us that there will probably be no more than $100 worth of replacements of tile in the entire building. In spite of the terrific heat, in which the glass of the windows ran like water, which turned to steam the streams from the fire hose before they reached the building, in spite of this inferno clay products stood their ground.

Terra cotta did not fare so well, and numerous places can be seen where the surface has been damaged by spalling and chipping of the enamel. This, however, is not to be wondered at since a part of the face was subjected alternately to the terrific heat of the fire and to the jets of cold water from the nozzles of the fire hoses.

COAL PRICES IN IMPORTANT FIELDS

Despite the strike threat, coal prices immediately before April 1 showed very little fluctuation compared with prices of a month ago. Following are prices on various grades of coal in the different important fields taken from the Coal Trade Journal. These are the latest prices available.

ILLINOIS:	Mine Run	Prepared Sizes	Screenings
So. Illinois	$2.50–2.75	$3.10–3.65	$2.00–2.25
Cent. Illinois	2.25–2.50	2.75–3.25	1.65–2.00
Peoria District	2.25–2.50	3.00–3.50	1.30–2.00
Northern Illinois		4.25	3.85
INDIANA:			
Clinton District	2.25–2.50	3.00–3.50	1.85–2.00
Linton District	2.25-2.40	2.65-3.25	1.40-1.75
Knox County	2.25–2.50	2.65–3.25	1.40–1.75
KENTUCKY:			
Southeastern	1.50–1.65	2.00–2.25	1.25–1.35*
Northeastern	1.35–1.50	2.00–2.25	1.15–1.25*
Western	1.65–1.90	2.25–2.50	1.40–1.55*
OHIO:			
Pittsburgh No. 8	1.85–2.00	2.25–2.75	1.60–1.80*
Hocking	1.65–1.90	2.50–2.75	1.40–1.65
Pomeroy	1.65–1.90	2.50–2.75	1.40–1.65*
WEST VIRGINIA:			
Kanawha and Logan	1.25–1.50	2.00–2.50	1.10–1.60
Fairmont	1.25–1.50	2.00–2.50	1.10–1.60*
PENNSYLVANIA:			
Pittsburgh	1.90–2.15	2.15–2.50	1.70–2.00*
Pittsburgh Gas	2.15–2.75	2.35–2.75	1.90–2.25*
South Fork**	3.05-3.25		
Good Clearfield**	2.00–2.25		
Ordinary Clearfield**	1.70–1.85		
Connellsville District	1.70–2.25†	2.20–2.50	1.60–1.90*

*Slack

**Low Volatile

†High Volatile

* * *

Brick Being Sold as Fast as Shipped Into New York Market

BUILDING MATERIAL manufacturers are beginning to feel the pinch of the prospective coal strike, says the Dow Service daily building report of March 25, 1922.

Facing a coal strike, therefore, just at the beginning of the spring manufacturing season, with a potential demand far greater than has been recorded in recent years, Hudson river brick producers at the week-end were vieing with each other in this market to find available coal dust to permit them to start their plants as early as possible.

Great fleets of barges were being assembled preparatory to being towed to brick manufacturing points between here and Kingston and it is the custom to take up on these empty barges fuel and coal dust. The market was scoured by manufacturers and their agents for culm with the result that for the first time in the memory of the oldest brick manufacturers, it became necessary to buy this material at the mines which, of course, will mean a much higher delivered price at the plant as it has to be transhipped to barges at New York, because few Hudson river brick plants have rail connections.

Prices Not Likely to Rise

It is not probable that the present stability of the building material price market will be seriously disturbed by the fuel situation. Demand will have to greatly exceed the value and volume of present actual buying orders to change the price situation except possibly in cement, steel and probably wood lath. Hudson common brick, to be sure, has been showing some inclination to get back to the $16.50 to $17 wholesale price base alongside dock, New York, but dealers are still ordering brick for delivery here by rail and there is too much competition for the kind of business now being offered, to lend much strength to prices much higher than the present levels. All the brick that is being sent to this market is being promptly sold. There was only one barge left unsold on March 24, with five more barge loads expected by the end of the week.

Contractors seem to be counting upon a heavy shipment of Hudson brick as soon as the barges up river are loaded and are towed down, to check any excessive price advance even in spite of a temporary shortage of fuel. If the fuel shortage should become protracted, and building material demand should continue to improve, an entirely different outcome as to brick, hollow tile, cement, lime, plaster and steel prices may be looked for.

Demand for Materials Growing

The economic stage is set for price and supply conditions to be favorable to spring builders. There is no serious lack of supply. There is a growing demand for building commodities of all kinds. There continues to be a well defined turn of tendency toward commercial and small industrial enterprise. Apartment and small dwelling types of speculative building material requirement is to give way to a demand for other types of housing construction of large units, designed to permit of low rentals to tenants. This type of building erection can flourish only when building materials are plentiful and reasonable in price, a situation which builders may confidently expect will characterize the spring and summer markets.

What to Do About Clay Plant Labor

This Will Be Keynote of Discussion at First Annual Meeting of National Clay Association Specializing in Industrial Relations

A WELL KNOWN national slogan can easily be changed to indicate the spirit that will permeate the convention of the National Clay Products Industries Association to read, "In time of business depression prepare for prosperity." This in a few words will be the theme of the first annual convention of this organization which will be called to order at the Congress Hotel, Chicago, at 10 A. M. Friday, April 21. The theme has more than ordinary significance, for unless preparation is made in a period of business depression there will be no prosperity.

The National Clay Products Industries Association is an organization composed of clay manufacturers in all branches of the industry, the sole purpose of which is to improve that end of clay manufacturing which is, as in other industries, a difficult one to manage: namely, the personnel.

The history of the employment of labor in the clay products industry always shows that when business is good there is a scarcity, and when business is depressed there is an oversupply of efficient, skilled labor. There are plenty of reasons for this situation, some of which are very obvious, and it has been said that the clay industry usually gets the riffraff and floaters not desired by other manufacturers. One of the objects of the forthcoming convention is to study this subject and make an attempt to remedy the conditions.

To Develop Skilled Laborers

Plans will be made for training skilled laborers, so that when demand reaches toward the peak of production, there will be skilled men available for every job. Moreover, arrangements will be made for transferring these types of men from a location or territory that may be feeling a slight demand to one that is rushing production to its limit. This is a great forward step in the clay products industry and should make for a better class of labor, and with this will come greater efficiency and lower production costs.

The labor turnover in the clay products industry at times has been enormous, and every manufacturer knows that this occurrence has added materially to his costs. In these days of reconstruction, the elimination of every possible waste in industry and every conceivable chance of decreasing costs must be taken advantage of by preparation in advance. Labor turnover is one of the most costly wastes that occurs in any industry, and the clay products industry probably ranks as one of the industries having the greatest amount of labor turnover.

Labor and Capital Dependent on One Another

Thomas A. Edison said not long ago, "Can't the world be brought to see that labor and capital are like the clock and the pendulum? The pendulum cannot work without the clock and the clock cannot work without the pendulum. If the clock hurts the pendulum, it stops the clock, and if the pendulum hurts the clock it stops the pendulum; they must work in harmony with each other, and there should be no friction, for whatever hurts either hurts both."

And yet we find labor and capital, so-called, arrayed in hostile camps attempting to damage each other. During wartime, labor got the upper hand in power and we have seen them abuse it. It is because of this abuse that the open shop movement has gained great strides in industry.

At the present time the employers have the upper hand in power, and any abuse that they would make of this power will come back as a boomerang at a later period. The way to eliminate this trouble is to consider the problem of industrial relations and the responsibility of the employer.

Want to Deal Fairly With Labor

The National Clay Products Industries Association has made good strides towards educating open shop workers for the industry in the past year of its existence, and is able at this time to assist those manufacturers who desire it. The purpose of this association is not to gouge labor, but to deal fairly with it and to enable employers to take counsel with one another and exchange views upon these vital matters which must be solved at this time if the period ahead is to be made peaceful and prosperous. There is no more important matter for the employer to consider today than the future relation in industry of the employer and employe. Thus the forthcoming meeting of the National Clay Products Industries Association promises a large attendance of clay products manufacturers who desire to place their works on a basis which will mean a healthful and peaceful future.

One of the important features of this convention will be a round table discussion of the experience of each attendant along the lines of labor cost, supply and efficiency. Every clay products manufacturer, regardless of whether he is a member or not, is cordially invited to attend. Commissioner H. A. Jung is working hard on his program and promises to have some prominent national speakers on industrial relations at hand to address the attendants.

* * *

REFRACTORIES MEN TO MEET IN CAPITAL

Huston Thompson, a member of the Federal Trade Commission will be the principal speaker at a luncheon to be given by the Refractories Accountants Institute in Washington, D. C. on Tuesday, April 25.

Plans are being made to reorganize the Institute (a subsidiary of the Refractories Manufacturers Association) and to put its government into the hands of a Board of Directors, who will elect the officers of the Institute from among its own members.

* * *

BRITAIN LEADS IN EXPORTS TO CANADA

According to "Commerce Reports," Great Britain has in the past two years outranked United States in sales of clay products to Canada. In 1920 the United Kingdom and the United States shipped practically the same amounts of clays and clay products into Canada. In 1921, however, British goods constituted 51.1 per cent. and American, 38.9 per cent. of Canada's purchases of foreign merchandise of this class. Three years ago the tables were practically reversed, the

United States leading with 53.4 per cent. as against 37 per cent. for Great Britain.

Canada's exports of clays and clay products amounted in value to only three per cent. of its imports. In 1919 and 1920 most of this ware was sent to the United States, but in 1921 other countries, including Italy and New Zealand, took a large share.

Table ware formed 73 per cent. of Canada's total imports of clays and clay products from the United Kingdom last year; in 1920 the percentage was 70 and in 1919 it was 75. Fire brick led among the Dominion's purchases from the United States. Japan and France also have an important part of Canada's table ware trade.

* * *

Should a Young Married Man Build or Pay Rent?

THE MAGAZINE OF WALL STREET recently published as one of its series of articles on a campaign of home building, the replies given by a home owner to seven questions with regard to home building that were asked by the magazine.

The Questions Asked

1. What made you decide to build a house?
2. How did you finance it?
3. How long have you lived in it?
4. Does it give you any more comforts than an apartment would give?
5. Has it been more expensive than rent would have been?
6. Would you advise a young married man to build rather than pay rent?
7. If so, why?

These seven questions are pertinent ones to home building, and are reprinted in the accompanying box. The replies are reprinted as follows:

Answer No. 1

Tired of paying rent—of having the family upstairs give a birthday party when my youngster was ill—tired of the give-and-take that is an essential of apartment life but not an essential of living.

Answer No. 2

Had about $1,000. Bought a 40-foot lot on an unpaved street at the edge—but in the direction of the growth—of a small suburban town, in the commuting zone.

After drafting plans and determining cost, a building loan of $4,500 was obtained, thru the contractor, from a capitalist who specialized in such. Application was made for a $2,500 loan from a Title & Trust Co., and when the house was ready for occupancy this was granted, the company taking a first mortgage. The $2,500 was paid to the holder of the building loan, reducing this obligation to $2,000, which was converted into a second mortgage, reducible at the rate of $25 a month until liquidated, with option of paying more, or all, at any time.

Total cost of house, $4,500; including lot, $5,500.

The adjoining 40-foot lot was bought out of the next two years' savings—$1,200—giving an 80-foot frontage. But this lot has been retained free and clear and was not placed under the mortgage.

Answer No. 3

This was five years ago. Since then the street has been paved, and the town has grown a half-mile beyond, more than 300 houses having been built in the new territory.

Answer No. 4

I have eight rooms and bath, two porches, hot water heat, hot water supply connected to furnace, no kicking to janitors and landlords, electric light, laundry in cellar with electric washing machine, base plugs all over the house so that the vacuum cleaner can be used in every room, even in the attic and cellar. Sunlight all the time the sun shines, a big yard for the children to play in—and they're healthy and rosy-cheeked—flowers, grapes and vegetables from a 30x30 patch in the rear corner farthest from the house—WHAT'S THE USE OF ASKING SUCH A QUESTION?

Answer No. 5

No. Taxes average $150 a year. Street assessment was $210 for curb-to-curb bithulithic macadam, payable outright, or in five annual installments. Water rate, $10 a year. No further assessments are possible for neighboring improvements, as law provides that only direct beneficiaries are assessed, indirect pro rate of improvement costs being assessed against town treasury.

Here's a statement of the approximate yearly cost: (averaged for five years, as the second mortgage interest charges have been reduced, there were no repairs the first two or three years, and the street assessment came the second year. Also the taxes have varied.)

Taxes	$ 150.00	
Interest on 1st mortgage	150.00	
Interest on 2nd mortgage	84.00	
Insurance ($4,500 for 3 yrs., increased since to $6,000—rate 50c for 3 years—total premiums $52.50)	10.50	
Water rate	10.00	$ 404.50
Repairs:—		
New leaders, etc. (did work myself), materials	$ 20.00	
Painted and stained (did work Saturday afternoon), materials	45.00	
Back porch steps and odds and ends of repairs, not over	50.00	
	$ 115.00	
Average per year		23.00
Add: 5 yrs. interest on original investment of $1,000	300.00	
3 yrs. interest on $1,200 paid for second lot	216.00	
Interest on capital paid in to reduce 2nd mortgage	180.00	
	$ 696.00	
Average per year		139.50
Street assessment paid outright	210.00	
Average per year		42.00
Total		$ 609.00
Average per month in 5-yr. period		50.75
Add $25 per month paid in on 2nd mortgage		
TOTAL AVERAGE OUTLAY PER MONTH		$ 75.75
Present condition of property:—		
1st mortgage	$2,500.00	
2nd mortgage	800.00	

The present value of the property is somewhere between $12,500 and $13,500, due partly to the increased cost of duplicating the house and partly to the increased value of the location. However, first and last, I have expended in actual "cash money" for property, repairs, taxes, assessments and interest something like $6,500, and the mortgages outstanding total $3,300. On the basis of a sale at $12,500. I would receive back every cent I have paid in, and would still be $2,700 to the good—that is, I would receive $9,200 above the mortgages.

Do you know any place where I could cash in $6,200 in rent receipts for $9,200 in real money?

Answer No. 6

Yes.

Answer No. 7

See answers to questions 1 to 6, inclusive.

Burning in a Coal Fired Dutch Kiln

This is the Fourth Article of a Series on Setting and Burning in Up-draft Kilns—Tells in Detail How to Proceed with Fires in Dutch Kiln

By Elias Petts

THIS TYPE of up-draft kiln is so generally known and used in so many parts of the country that it would seem that one might get all the information he might need almost anywhere, and yet we find people who are using this type of kiln, who do not seem to understand it and who are having only a very limited amount of success, and some who are making what might be termed almost a failure.

Again, there are others who are making such a success of burning in this type of kiln that it would be very hard to induce them to adopt any other method of buring. To these, we would not pretend to give advice, but if we can help those who are not having the best results, we will feel as Mark Twain once said, "We have not lived in vain."

There are different ways of building the Dutch kiln. Some are constructed with grates only a short distance in the kiln, others with grates running nearly to the center, and still others with grates all the way thru the kiln. We shall not attempt here to discuss the merits of each, as each has its good points for some clays and is, therefore, good in its place.

Open Platting Before Starting Fires

We shall, as before stated, try to tell how we would burn a kiln of this type, if we had it to do, without any previous knowledge of the particular clay to be burned. Therefore, if we seem to emphasize the "go-slow" proposition too much, just remember we are not advising you who are successful.

Open up your platting before starting the fires, as this allows the water-smoke to escape more freely and prevents the softening of brick that are not yet hot, as is the case with some clays.

When starting the fires, be sure to start with a small fire on each side at first and proceed very slowly. If you take off the water-smoke with wood, as is done in some localities where coal makes an excessive amount of soot, it will be necessary to watch this very closely, as wood heats up very rapidly and might cause checking of the brick in the early stages of the firing. There are some clays that make a very fine brick if heated very slowly, but to heat those same brick rapidly would be positively ruinous; again, there are a few clays that to go too slowly would have a bad effect on the brick.

Keep Fires Low in Beginning

If you burn, as some do, with bituminous coal altogether, you can more easily keep the fires low by banking the fine coal on them and only letting them burn thru very slowly. If, however, you start with anthracite coal, as some do, it is much more difficult to go slowly, as it is necessary to maintain a fairly good fire to make hard coal burn well. For this reason, we do not advocate starting with hard coal, unless you know your clay will stand rapid heating without damaging the brick.

The writer has been on some plants where, when they started firing a kiln, if the fires burned up a little bright, it would sound like Uncle Sam's infantry attacking, and unless the fires were immediately smothered down, it would be about as disastrous to the kiln as an attack of that same infantry would be to the enemies of "Old Glory."

But if your clay stands the fire without any apparent damage, you may gradually work the fires further into the kiln until all the grates are covered. The sooner the grates are covered, the better, if the clay will stand it Keep a close watch on your arches, and you can tell how they are standing it. If you find it necessary to proceed very slowly, in order to prevent damage to the arches, it is best to close the ash pit in some manner to prevent the cold air passing in and up thru the grates that are not covered, thus keeping that part of the kiln from heating.

Always Keep Grates Well Covered

Do not close the top or fire door until you have the kiln well heated and water-smoke nearly gone, and then not tight, especially if your grates run only a short distance into the kiln. If the grates run nearly, or all the way across the kiln, the doors can be closed sooner, for the reason that you have coal burning on a grate the entire length of the arch, and the middle will get as hot as any other part of the kiln, and sometimes hotter, if the grates are kept evenly covered, which they should be at all times after they are once covered.

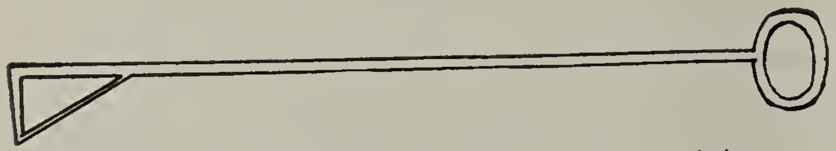
ELIAS PETTS.

When your water-smoke is entirely gone and the kiln is hot all over and there are no cold spots anywhere, you may close the doors as tightly as they will go, without daubing them, and keep the arches as hot as they will stand, without starting the settle.

Keep the fires level. Do not let a bank of coal pile up anywhere in your arch. If you do, you cannot see how to place your coal and can never be sure the grate is all covered; and if it is not covered with live coals, you may be sure of one thing —cold air is rushing up into your kiln and is retarding the burning, making the heat uneven and giving you a great deal *of trouble in settling the kiln evenly.*

Fire Should Be Kept Level

Keep the fire thin. Do not put in too heavy fire, and when you open the door to fire, look in to see that the fire is level. You cannot do this if you have humps of coal piled up in the arch at any point. You will, of course, have a little more coal just at the door, but not too much, and this should be knocked down with the shovel before firing so that there will be a clear opening thru which to throw the coal. When you open the door to fire, the first thing to do is to see just how the fire looks. If the fire is level, you can see this at a glance. If the fire has coal piled up in spots, you cannot see over those piles, hence the necessity of keeping the fires level at all times. Another reason—if you have a pile of coal anywhere in the arch, you will find that it will grow higher with each firing, because most of the coal which you try to throw over the pile will fall on it, thus building it higher. So again let me say, keep the fires level, and begin firing by throwing the coal first to the center of the kiln, or at least to the end of the grates; then drop each shovelful of coal a little nearer the door until you reach the door itself; put a little more coal just inside the door than over the balance of the grate, which should be done to keep up the heat next to the wall.


A Pole of This Shape Facilitates Shaking Out Ashes.

Heavy Firing Causes Trouble

Do not fire too heavily, but fire a little more frequently instead. I find so often that some burners put in heavy fires and then wait a long time before putting in another fire. This is bad firing for more reasons than one. If you allow the previous fire to burn too low before making the next fire, and then fire heavily, the heavy fire you put in will smother the fire already there; you will have slow and imperfect combustion, with a consequent loss of waste of fuel, and you will be losing ground with your burn instead of gaining ground. Now, the result will be quite different if you put in this heavy fire while the arch is hot enough to make a heavy firing burn quickly; you will have overheated, and, perhaps, melted arches, and you may have to remove them with a crow-bar or something stronger. If, however, you do not let the fires burn too low, and then, when firing, give them just a light covering, and when this has burned sufficiently, repeat the operation, you can maintain a uniform, steady heat, which is the secret of good burning. In other words, advance the burning as rapidly as it will stand, but do not advance it so fast that you will be compelled to hold back afterwards. And this applies to each individual arch in the kiln as well as to the whole kiln. Do not let one arch become hotter than the rest. This requires careful watching, but it is one of the prime requisites of a good burner, and good burning, like salvation, depends largely on watching at every stage of the game.

Clean Fires Often

Keep the fires clean. Do not have a set time for shaking out the fires. This, I find, is a very common fault with some burners; they shake out their fires just at certain times, regardless of whether or not they need it at that particular time, or how long and how badly they have been needing it for several hours before. Have one rule and one time for shaking out the fires, and let that rule and that time be whenever and as often as they need it to keep a sufficient draft thru the grates.

When you shake out the fires, do not just simply run the pole thru the arch, and then pull it out again—this is only half doing it. When you start the pole in at the door, instead of running it straight back to the centre of the kiln, work it back and forth, gradually going a little further toward the centre all the time. This method shakes out the dead ashes and gives you a clean, bright fire.

If you have very much coal in the arches, when you shake the fires, you will find they will brighten immediately and will get very hot; do not fire on this too soon, or the arches may become too hot. Again, we say, watch.

If this method is followed, you will find that the kiln will heat very rapidly.

Settling the Kiln

You will, of course, close down all platting as the water-smoke leaves the kiln, and in a short time, the fire will begin to show on top, and a little later, if you increase the heat gradually, the kiln will begin to settle. As soon as it does, and provided the center is settling as fast, or better still, a little faster than the sides or quarters, keep the doors closed tight, if you have to daub around them after each fire. Keep the heat right up to the settling point, so that the kiln continues moving, but do not settle too fast. If you attempt to settle too rapidly, you may overheat some parts of the kiln, with the result that there will be too much settle on the bottom brick and you will have a large amount of soft brick on top; but, do not let the kiln stop settling after the settling once starts until you are sure you have a good burn; and if you will keep the kiln settling until it is as hot just under the platting as it is in the arches, and it begins to slow up and finally will not settle any more, you can be certain you have a good burn. Of course, this does not apply if some one has gone to sleep on the job and let the kiln stop settling. A kiln should never stop settling after it starts, or you could easily be misled as to the amount of settle you would need to secure a good burn. This applies, of course, only where you are burning a clay for the first time, and not to a clay which you have burned before and with which you are perfectly familiar as to the amount of settle required to insure a good burn.

Settle Kiln Evenly

Watch the top all the time; keep the platting tight and the kiln level. If one arch shows it is settling faster than the rest, let this slow up by not firing it quite as strong as the rest until the balance of the kiln has caught up with it. Do not let up on it enough to do any damage to the arch, but just enough to check the settle at that point.

When the settle is completed, and the kiln is as hot on top as it is in the bottom, then let the arches cool down to a cherry red before daubing them finally.

Brick Up the Ash Pits

Some do not brick up the ash pits, but I believe this should be done at first, as often too much air goes thru the grates and this may cool the arches too rapidly. If you know that your clay will stand this, you may dispense with the bricking up of ash pits.

The sketch shows the kind of pole the writer uses for shaking out the ashes. This should be long enough to reach the centre of the kiln, and should be made of 1-inch iron, with the end forged down to an edge, which will make it slide more easily on the grates. It will be necessary to have two or more of these poles, depending on the size of the kiln, as the pole soon becomes hot and it is necessary to change to prevent it bending.

NO CLAY PRODUCTS AT CHICAGO SHOW

Interest of the visitors at the Chicago "Own Your Home Show" was centered around the "Home Convenient" built in the center of the vast Coliseum, where the exhibition was held. The home was full-sized and furnished. A number of exhibitors combined to make what was considered an ideal home.

There were no building materials of the clay products variety represented altho there was some sanitary ware exhibited. W. S. Dickey was on hand with a display of flue lining and vitrified clay septic tanks. A great amount of the space in the Coliseum was devoted to home equipment and manufacturers of various kinds of home accessories were plentifully represented. Many of the exhibits will be packed up and removed to the New York show in April.

* * *

A. F. B. A. SECTION MEETS

The Central Pennsylvania representatives of the American Face Brick Association held a meeting at Harrisburg, Pa., on March 17, comprising one of a series of local gatherings to be held for an exchange of views regarding the outlook and current conditions. A good delegation was present from the different districts, and it was reported that there is a marked improvement for the increased distribution of material during the spring. The outlook is considered as decidedly good.

* * *

This Home Was Termed Most Beautiful Small House in America

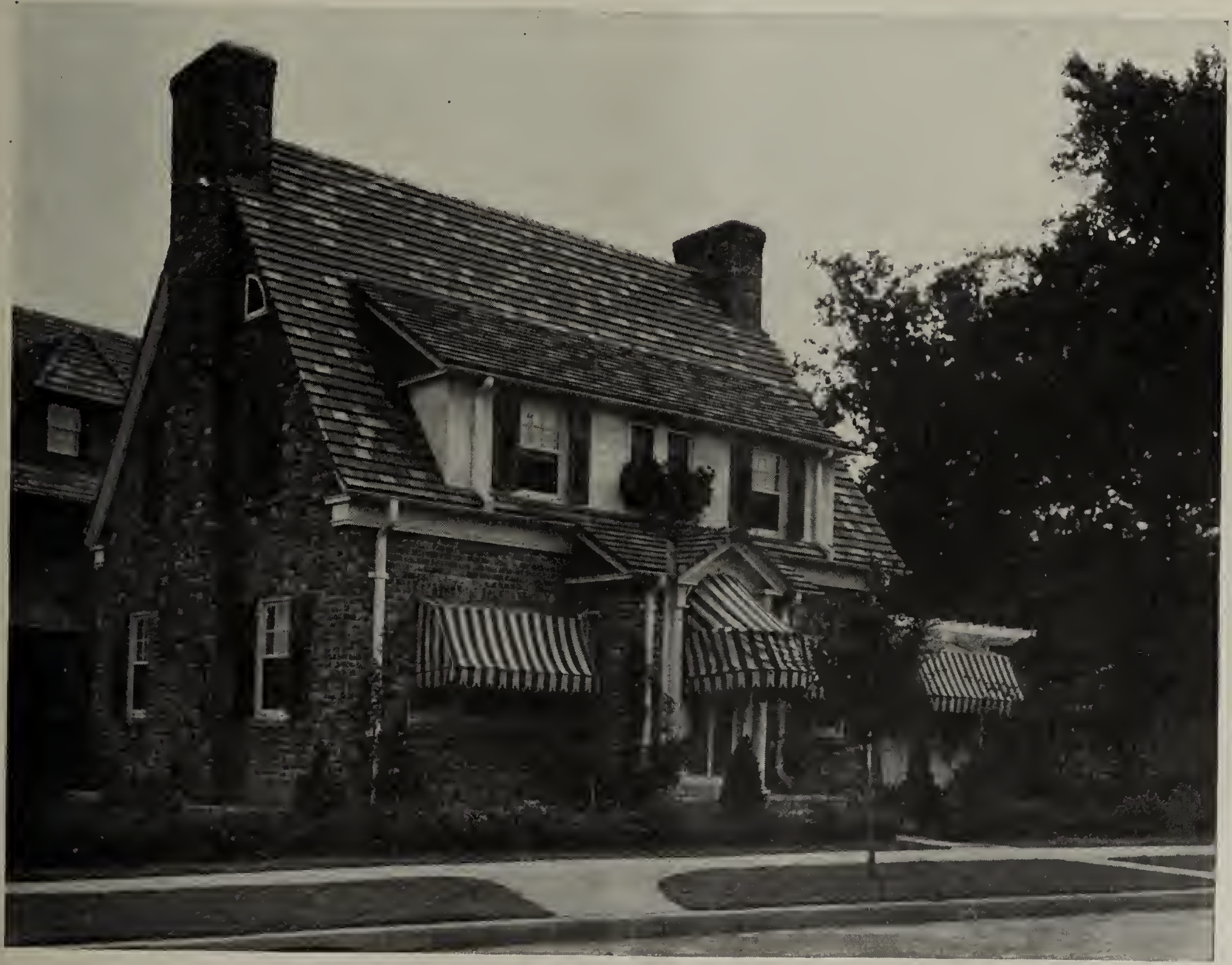
WILLIAM CARVER, architect of the Common Brick Manufacturers' Association of America, announces that plans for what is considered the most beautiful small house ever designed, are available for association members. Working drawings are also ready for general distribution.

"The house is of common brick construction and embodies the latest and most scientific improvements," says Mr. Carver. "In the country today there is an increasingly large number of prospective home builders who are interested in a house of smaller proportions which can be erected at a reasonable cost, and will possess the basic advantages of a larger home.

"There is a marked tendency among people who can afford the largest and most elaborate dwellings, to build homes of this type. Builders are leaning more and more toward the compact elegance and efficiency possible thru the use of common brick.

"The home illustrated was designed by a prominent Eastern architect who wishes his name withheld. He has put the plans and specifications in our hands for a wider distribution than would be otherwise possible, because of a desire to aid the ever increasing class of home builders interested in this style of homes.

"Members of the Common Brick Manufacturers' Association can utilize these plans and specifications to good advantage by giving them proper publicity among the various consuming agencies. The office of the association is ready and willing to answer any questions or give any additional information that is requested."



Plans and Specifications for This House Are Being Widely Distributed Thru the Common Brick Manufacturers' Association.

Selling Brick Now for 1940 Delivery

C. B. M. A. Carries Message of Brick to Children in Mother Goose Rhymes, Building Tremendous Bulwark of Good Will for the Product

ADVERTISING, which has long since been acknowledged as a science requiring much ability and study has recently revealed another angle to the many-sided problem which it presents and that is "dealing in futures." In this field clay products have stolen a march on competitive materials. Most publicity work which is now being done by individuals and by industries collectively is aimed to reach the buyer, the man or woman included in the potential market. That of course is of greatest importance and brings direct results, but, and here is where foresight and farsightedness play a big part, these men and women have, many of them, sons and daughters who are not yet in the market. Why not reach these boys and girls while they are still young so that when they become potential purchasers (this time comes plenty soon enough—for the man you are doing business with today is the son of the man you did business with yesterday) they will already have been sold on your proposition?

This is what the Common Brick Manufacturers' Association is doing and it is one of the very latest activities of that very progressive and active organization. In a little booklet, patterned after the Mother Goose rhymes we all know and loved so well, entitled "The Three Little Pigs," the C. B. M. A. is reaching the youngsters with the message of brick.

This is the story of the three little pigs who went out into the world to seek their fortune. The first little pig built himself a house of straw and before he got settled the wolf came, blew down the house and ate the foolish pig. The second one built a house of lumber and met with the same fate as his brother. The third little pig had learned his lesson, however, and built himself a house of brick. When the wolf came and tried to blow down this substantial house the little pig only laughed and the wolf left in disgust.

Booklets Widely Distributed

These booklets have been distributed to thousands and thousands of homes and have been read by as many children. Further, many thousands of parents have read this story to their children and have thereby unconsciously, but none the less unmistakably, absorbed some of the brick doctrine expounded therein. The verses are worded with a subtle cleverness which brings brick to the front unmistakably yet inoffensively; for instance:

Now the wise young piggy named Jack,
He had seen Mr. Wolf's plain track;
And he knew for the wind and storm
He must build,
Yes he must—
A snug house to keep him quite warm.

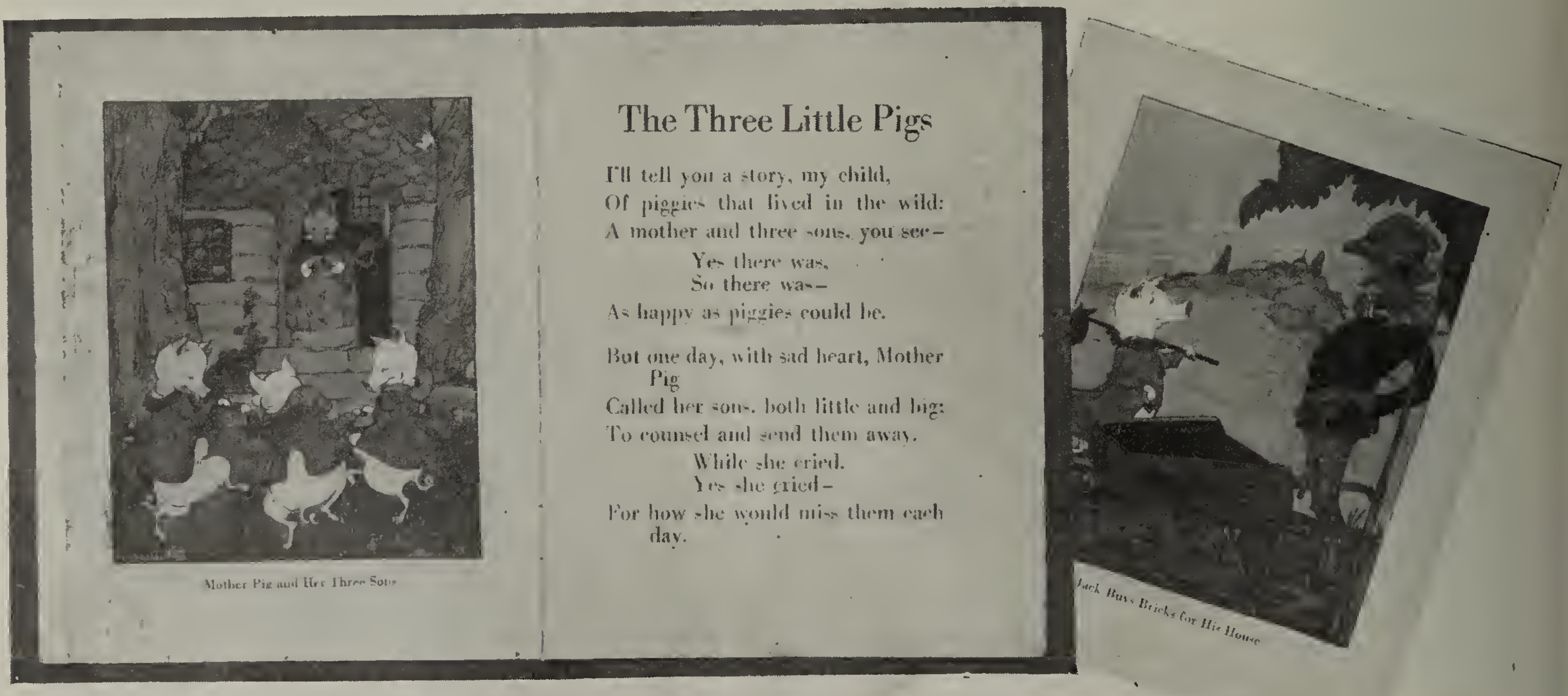
'So gathering materials the best,
That would stand whatever the test.
He then chose most cherry bright bricks;
And he used,
Yes, he used,
A trowel the mortar to mix.

And when the story is finished, the child itself unconsciously helps along the good cause.

"But Daddy, why couldn't the wolf blow down the brick house?"

"Why, a brick house is so strong and solid that nothing can harm it," Daddy answers, and so convinces himself and the child both of the merits of that type of construction.

Now, there may be many who deem this kind of publicity work as waste of money, but to wise, thinking people it must seem to be the very finest kind of clay products propaganda. The mind of the child is absolutely open to any-



Mother Pig and Her Three Sons

The Three Little Pigs

I'll tell you a story, my child,
Of piggies that lived in the wild:
A mother and three sons, you see—
Yes there was,
So there was—
As happy as piggies could be.

But one day, with sad heart, Mother Pig
Called her sons, both little and big:
To counsel and send them away.
While she cried.
Yes she cried—
For how she would miss them each day.

Jack Buys Bricks for His House

Three Pages from the Booklet, "The Three Little Pigs," Which Is Being Distributed To Thousands of Homes All Over the Country.

The Exhibit of the Builders Exchange of Cleveland at the American Building Exposition Which Will Be Held in Cleveland Starting April 22.

thing that is told in an appealing way and, eminent psychologists tell us, is extremely impressionable so that the message of brick which is carried in these booklets is gotten across with permanent effect. The child gets the idea that brick is the only thing to use for a home, all other materials are unsafe and flimsy and this impression sticks and is retained. This means that the common brick industry is building up an immense amount of good will for brick which will make it so much easier to preach the gospel of brick to the man who is going to buy.

Had this type of advertising been started three generations ago, the clay products industry would be in a vastly better position now. It would have provided a solid foundation for the propaganda now being promoted. Everyone knows that it is easier to talk to the man who is already favorably inclined toward your product than to a man to whom you must first sell the idea.

In order that this propaganda can do the maximum amount of good, the booklets must be distributed as widely as possible. Every brick manufacturer should distribute them in his own locality. They are available at a low cost and may be secured from the Common Brick Manufacturers' Association, Cleveland, Ohio.

* * *

WANT FIGURES FROM TRADE ASSOCIATIONS

Representatives of trade associations of interstate or national scope will meet with the Secretary of Commerce in conference in Washington on April 12. The purpose of this conference is to secure a list of trade associations that will furnish voluntarily to the Department of Commerce classes of statistical information outlined in the correspondence between the Department of Commerce and the Department of Justice. The Department of Commerce is anxious to secure such statistical information for the purpose of distributing it to members of the associations and to the public.

* * *

300 EXHIBITORS AT CLEVELAND HOME SHOW

Preparations for what promises to be the year's greatest building and home exposition are rapidly nearing completion at Cleveland, Ohio. The American Building Exposition, claimed to be the largest affair of its kind ever held in the country, will open April 22 and extend thru to May 2. After several postponements this date has now been announced as the definite time for opening.

According to the managers of the show, it will represent an outlay of over a million dollars. The list of exhibitors is growing daily and it is altogether possible that the original estimate of 300 will be greatly exceeded. Among these exhibitors will be numbered leading brick and clay interests from all over the country.

The feature of the exhibit will be six complete houses illustrating the advantages of different building materials. Several of these dwellings will feature brick and brick veneer construction. Different types of flue and partition construction, as well as the latest in tile flooring will be illustrated. Both the brick and lumber interest will show complete houses, fully landscaped, one of these being estimated to cost close to $25,000.

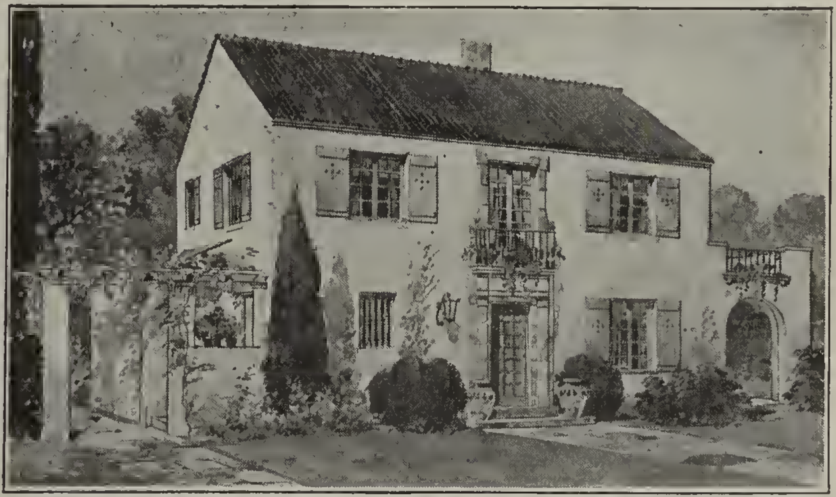
One of the most interesting features will be a public vote on the best home costing less than $25,000. This contest will be conducted by the Cleveland branch of the American Institute of Architects in a large special booth. Home owners have been invited to send in photographs of their residences.

Sponsored by the Builders' Exchange of Cleveland the exposition is being planned upon a cooperative basis by which the net earnings of the show will be rebated to the exhibitors, in reality permitting them to enjoy all the benefits of the exposition at actual cost.

* * *

MODEL HOME FEATURE OF NEW YORK SHOW

The feature of the New York "Own Your Home" show is to be the Beautiful Home Convenient, the architect's drawing of which is illustrated here. It was thought that in this way an unusual appeal could be made to the visiting public, the ideal home could be visualized, combining economy with good taste in every phase. This home is not the work of any one exhibitor, but combines all types, such as building material manufacturers, home furnishers, decorators, landscape gardeners, in fact all are contributing to make this home most complete. The object of building this home was expressed by Dwight James Baum, architect and designer, who says, "We want the public attending the exposition to be so fired with the desire to own a replica of this house that they will then carefully take up the various details of construction and equipping at the various booths."



The "Beautiful Home Convenient" Which Is to Be the Feature of the New York Own Your Home Show.

Deposits Brick in Neat Pile on Job

Atlantic City Brick Manufacturer Uses Special Truck Body Which Increases Efficiency of Brick Deliveries

THE PRESENT DEMAND for greatest possible economy in production and operations in industrial plants, has made vitally necessary the utilization of machinery and equipment of highest efficiency, and every practical labor-saving device that will bring desired results.

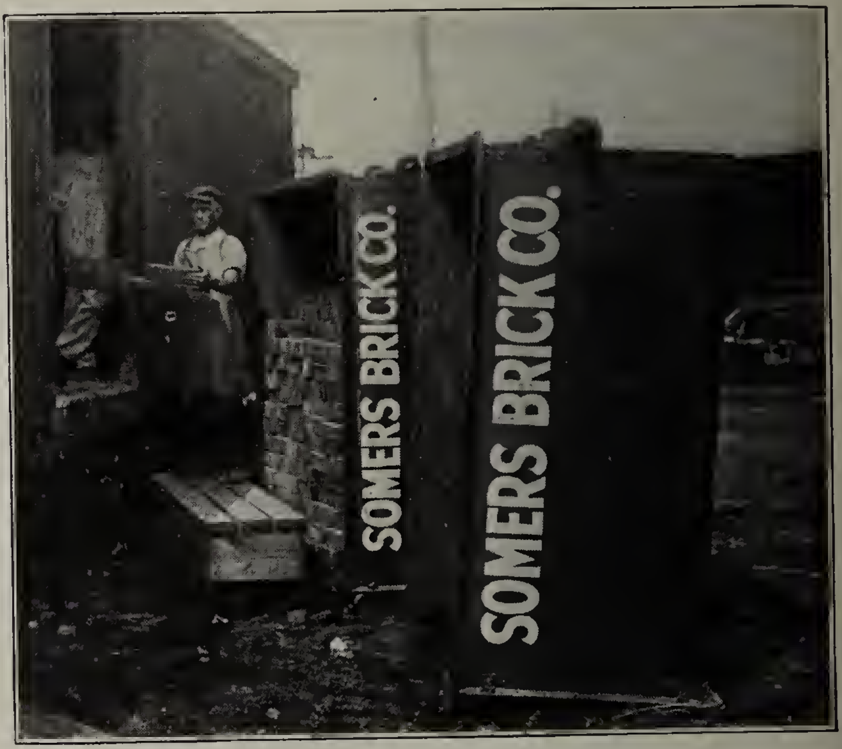
Brick plants, ceramic factories and factories in other lines must give strict observance to every feature of production. Small inefficiencies make small leaks, and many small leaks bring about an almost astounding loss ere many weeks and months have rounded out. Considering particularly the brick plant, the downward tendency in price levels, and the evident intention of constantly trying for lower quotations on the part of the consumer, makes best possible operation at lowest consistent cost a matter of primary moment. If brick must be manufactured and sold at reduced figures, no effort can be spared in any direction to effect lower production costs.

Brick Handling Very Important Item

The matter of handling brick is an important one, whether applied to manufacturer or dealer. Hand labor must be supplanted by mechanical equipment, or at least so supplemented that the manual end is minimized to the greatest extent. Labor costs have not, as yet, dropped in proportion to other phases of production, and accordingly, the brick producer must scan particularly the figures entered against this item on the ledger with a view to keeping them at a minimum.

How the Somers Brick Co., Atlantic City, N. J., is caring for the situation can be shown in various features of current operation, and this brief article is arranged to deal only with the matter of loading and unloading of brick, or in other words, handling the material for delivery on the job.

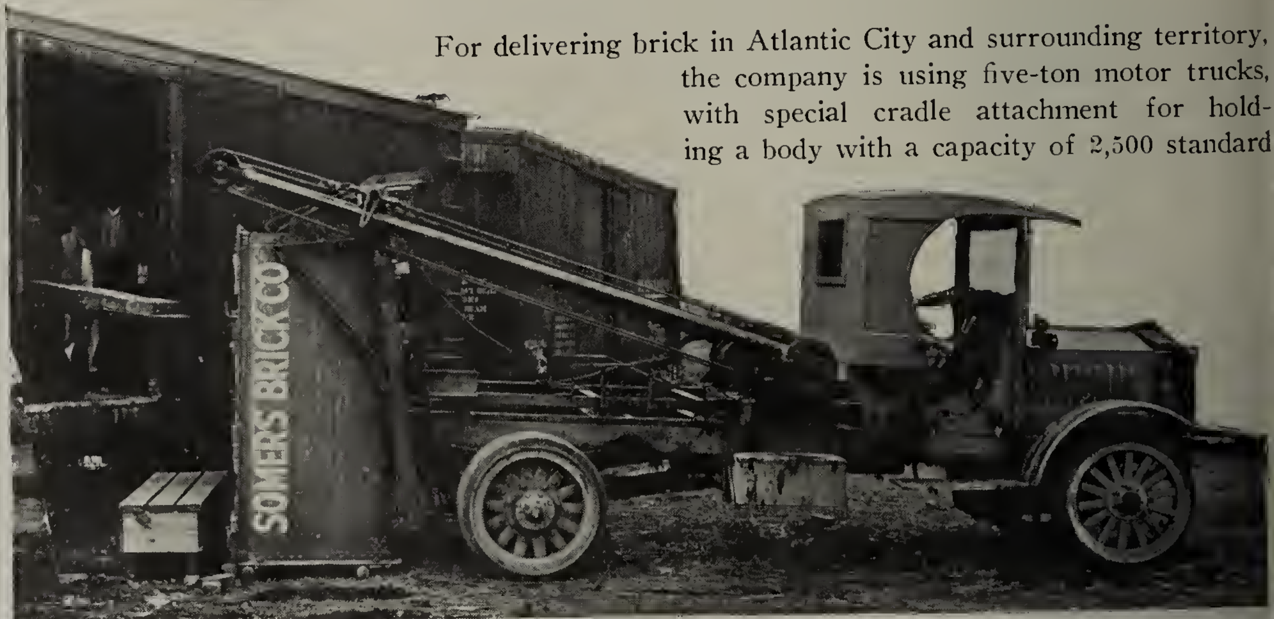
Special bodies for motor trucks for this service are not particularly new, but right method of procedure is highly essential if right efficiency in service is to be secured. The Somers Co. has perfected a system in this respect that is showing exceptional economies and ultimate results of more than ordinary interest to others in this line of business.



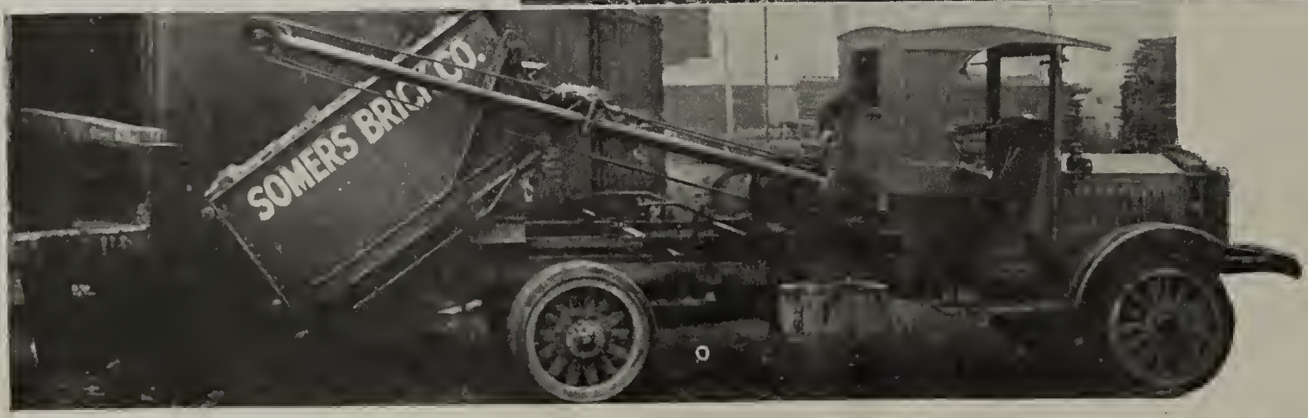
No. 1. This Demountable Truck Body Makes Loading an Easy Job.

Use Demountable Body for Delivery

For delivering brick in Atlantic City and surrounding territory, the company is using five-ton motor trucks, with special cradle attachment for holding a body with a capacity of 2,500 standard



No. 2. At the Right Can Be Seen How Simple It is to Place the Loaded Body on the Truck. The Automobile Engine Does the Work.



No. 3. Contrary to What One Would Expect the Body Does Not Require Much Room When It Is Being Swung Onto the Truck. Space Is Saved by Making the Angle of Lifting Very Acute.

sized brick. This body has one solid end and one open end. The cradle frame and body are of the Fontaine Demountable Truck Body type.

The truck body, shown in the accompanying illustrations, is of gravity design, and operates on an incline plane, with hoist attachment. It is of reinforced sheet steel. The cradle is formed of structural steel and is mounted on the frame at front and rear by large rollers; these latter provide easy running and perfect smoothness in operation. The hoist is of the worm and gear type, integral with drum, and is mounted on the frame in a manner to provide a direct pull on the body.

Loading the Truck

For loading, the truck is backed up to door of the car of brick, or to the brick pile, as the case may be, and by means of a power take-off connected to motor-truck engine, the cradle is operated so that it places the body in a vertical position, with open end on the ground, as shown in Fig. 1.

Two brackets are placed about three feet apart on each side of this end (the open end) of the body, so arranged for seating two two-inch pipes, and which, inserted thru the brackets serve as rests for a loose wooden tail gate, easily set into place. The tail gate is composed of two 4x4 inch timbers, spaced about three feet apart, to which are nailed five or six ⅞-inch planks, shaped to fit closely in the body.

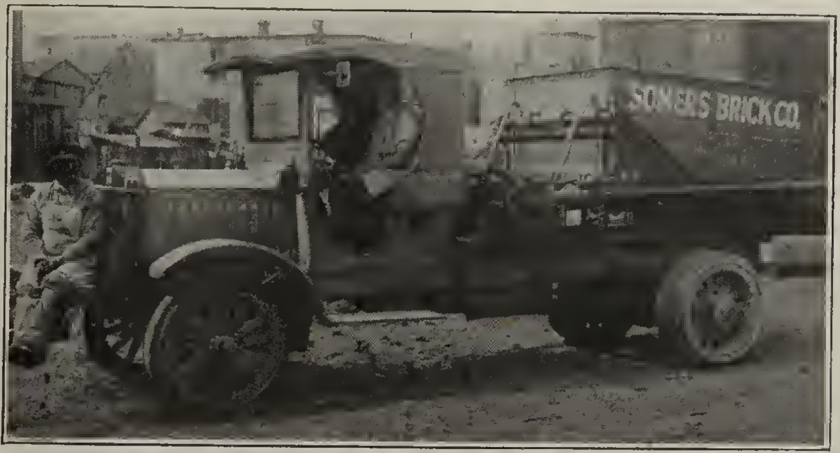
As shown in the illustration, Fig. 1, the brick are piled in the body on this wooden tail gate and, to insure a tight pile, the brick are cross piled every other row. When loaded, as will be understood, the brick rest entirely upon the tail gate.

Unloading the Truck

When the body is fully loaded, the power take-off is again placed in operation, and this time, the cradle with body is pulled thru a 90 deg. arc, as set forth in the illustrations, Figs. 2 and 3. When it reaches a point of rest, the body is in proper position on the truck chassis, as illustrated in Fig. 4, loaded with brick.

Proceeding to the job, the truck is backed up to the point where the brick are to be unloaded. The power take-off is placed in operation, and this time the body and cradle move thru a 90 deg. arc in the opposite direction until the body stands in a vertical position, with the 4x4 inch timbers of the wooden tail gate resting on the ground, shown in operation in Fig. 5. Following, the two inch pipes easily are removed from the brackets, thus releasing the tail gate from the body. As the body is slowly pulled away, the brick are left standing in a neat, compact pile, resting on the wooden platform, set forth in Fig. 6.

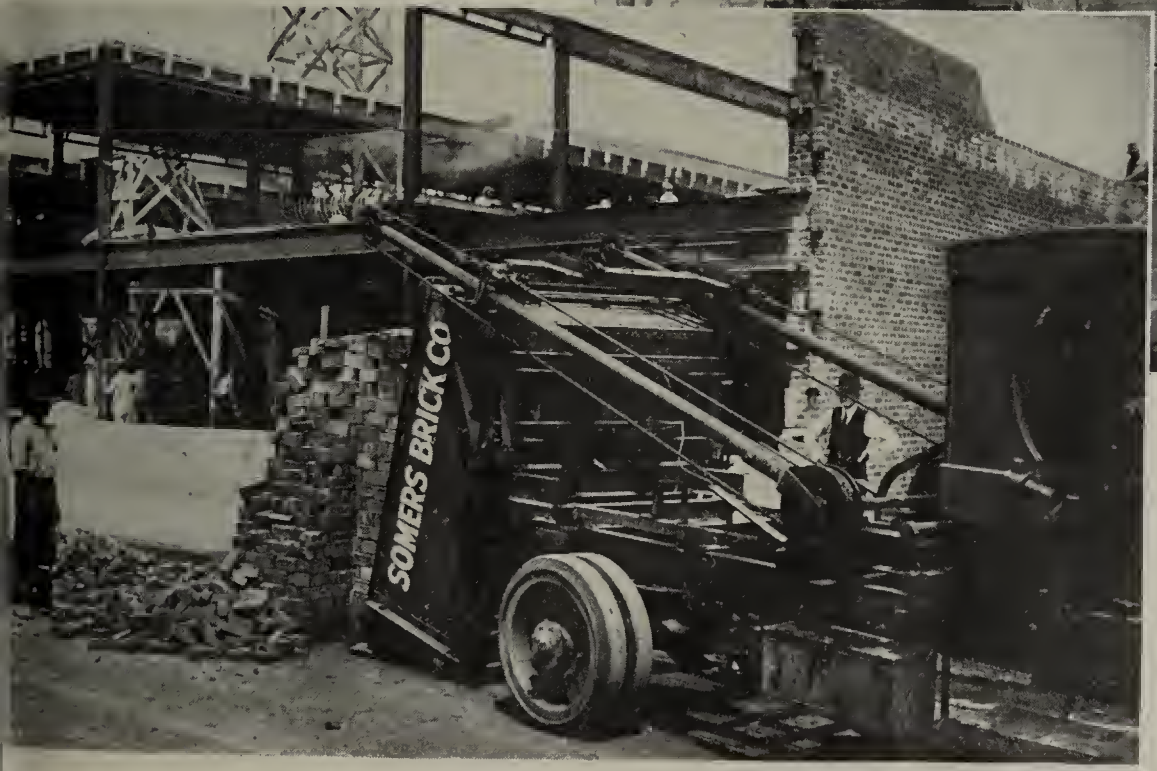
The operation of loading the body on the truck requires about three minutes, and the unloading takes the same length of time. The company has found that it can make an average round trip from its local city yard to any point in the city district within half an hour. This includes the signing of tickets at the job, and other minor, but necessary work.



No. 4. As the Truck Looks With Body Mounted Ready to Deliver on the Job.

To facilitate the moving of brick for local distribution, the company has been using as many as five truck bodies at a time. This permits the keeping of the motor truck in almost constant service; the bodies are loaded at the car or the brick pile in lots

No. 5. Below—The Truck Handles the Load Very well and Lets It Down in a Neat Pile Wherever It is Desired.



No. 6. These Regular Piles Save Considerable of the Hod-Carrier's Time and Hard Work Because the Brick Are More Easily Handled.

of two or three at a time, the motor truck picking up the different bodies at regular intervals and delivering to the job. The company has been distributing as many as 32,000 brick per day with one motor truck, and the greatest difficulty has been to keep it loaded. Lately, a second truck and outfit have been placed in service.

Big Economies Effected

The company has developed operation to a point of handling practically all brick from its yard at Bakersville to Atlantic City, a distance of about nine miles, by means of the motor trucks. Under normal operation, the trucks make five round trips daily between the two points, carrying 2,500 brick per load, or averaging about 12,500 brick per working day. During rush periods, night operation in the same manner with an extra shift of men is resorted to, and very satisfactory results secured. Freight charges have been kept at a minimum, and there has been a substantial saving in this direction.

In commenting upon the attainments, the company says that there has been marked economy both in loading and delivery costs, to say nothing of the satisfactory service rendered. Under effective loading conditions, using a light wooden frame over the brick as they rest on the wooden tail piece, a load of 2,500 brick can be picked up and placed in the truck body in about five minutes.

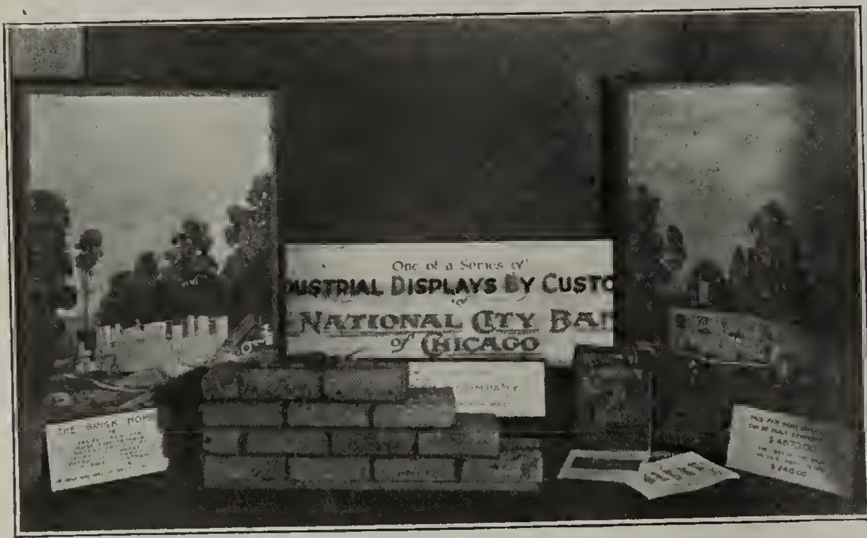
One of the particular points of merit in this method of operation, and much to the favor of the local contracting trade, has been the reduction in brick breakage, due to the slight handling necessary for delivering on the job.

* * *

WINDOW DISPLAY ATTRACTS PUBLIC

In the window of the National City Bank of Chicago, which is located in the downtown section of the city, the Illinois Brick Co. has an extremely interesting advertising display. The bank makes it a practice to permit depositors the use of the windows for a limited time for advertising purposes. The Illinois Brick Co. availed itself of this courtesy and is now running the display shown in the accompanying view. Altho there is nothing elaborate about the exhibit it nevertheless tells a powerful story and attracts considerable interest.

It consists of two pictures and a section of eight inch wall laid up. The picture on the right shows a brick bungalow with the surrounding grounds and gardens. Below it is a card which reads, "This five room brick bungalow can be built for $4,780 complete. The brick in this house cost $240." And this card is the secret of the window's great attraction; that little sign is the big reason why there are always from five to fifteen people clustered in front of the exhibit. Remarks like "Why, that's as cheap as a frame house," or "You can't build a house any cheaper from lumber," can be overheard at any time.



Window Display of the Illinois Brick Co. in Chicago. This Exhibit Has Attracted Considerable Attention.

People are interested in the home building proposition as they never were before and brick would come in for a greater share than it has enjoyed heretofore if the public knew the truth about the cost of a brick home. They are fast learning that the difference in the cost of brick and frame is not 20 per cent. or 30 per cent. or any such ridiculous amount, but there are still very many people who think brick is absolutely and completely out of range of their pocketbook.

The balance of the display consists, in the left hand corner of the window, of a painting showing a brick home half completed and in the center is a small section of an eight inch solid brick wall built of common brick with black mortar joints.

* * *

NEW FARM BULLETINS ARE VERY GOOD

Farmers Bulletin No. 1227 on Sewage and Sewerage of Farm Homes, and Bulletin No. 1230 on Chimneys and Fireplaces, have recently been issued by the U. S. Department of Agriculture. These bulletins are very fine and cover their subject quite completely. A very fine idea of farmers' needs can be gained thru them, and it would be well for manufacturers catering to this trade to acquaint themselves with these bulletins.

* * *

FORM MEXICAN CHAMBER OF COMMERCE

Announcement has been made of the organization of the Mexican Chamber of Commerce of the United States, under laws of the state of New York, following the submittal of the matter to the Secretary of State, State Department, Washington, D. C. The objects of the chamber will be the promotion of business and economic relations between Mexico and the United States, spreading of general information of reciprocal interest, and the fostering of friendly, neighborly feelings.

* * *

DO YOU KNOW AN OLDER BRICK ROAD?

From Washington, D. C., comes the information that the Bureau of Public Roads says the first brick road of which they have a record was built in Charleston, W. Va., in 1872. If any of you can antedate that, get on record with the bureau and let's set history correct.

* * *

SHOW PAVING BRICK STORY IN FILM

In a new one-reel film entitled, "Brick—From Clay to Pavement," the U. S. Department of Agriculture shows the transformation of raw clays into a durable, hard-surfaced, vitrified brick pavement, showing both modern methods of paving brick manufacture and road building. The scenes carry the audience thru the various processes of manufacture from digging of the shale or clay in the pit to the grinding and preparation, drying and burning. The next step shows the preparation of the road base and various types of brick roads in use, the rolled base, monolithic and semi-monolithic being included. Other views show the completed brick pavement.

The film was produced under the direction of skilled highway engineers of the Bureau of Public Roads, and is designed to instruct in approved road building practices. Copies of the film are for sale at cost or will be loaned free for short periods.

* * *

GET 3 TO 20 HEATS FROM FIRE BRICK

Tests made on 15 brands of fire brick by the Bureau of Mines at the Ohio Malleable Iron Co., Columbus, indicated that the lifetime of a fire brick in a malleable furnace varies from 3 to 20 heats. It was found that fire brick showing the lowest spalling loss gave best results in service.

The Building Situation

CONSTRUCTION CONTRACT totals are advancing rapidly in New England territory, with the Boston district taking the lead. From $3,500,000 to $4,000,000 a week is now the average here, an important advance over the figures for 1921. Weekly building permits for the last fortnight in March are reaching the million dollar mark.

Cambridge, Worcester and Springfield are also resuming building operations in a substantial way.

The Boston brick market shows the following prices:

Common brick, delivered to contractors in carload lots, $16 a thousand; common sand-struck, delivered to the job in truckload lots, $17; best New York common, $18; best New England common, $21.

Water-struck, kiln run, $30 a thousand, delivered; selected water-struck, present stock, $35; selected water-struck, new stock, $32 on the job. Face brick, rough and smooth texture, $50, delivered.

Hollow tile is in greater call and showing price firmness. Present quotations are:

Size, 4x12x12 inch, $96 a thousand to contractors in carload lots, and $140 a thousand from local material yards, delivered on the job; 8x12x12 inch, $182 to contractors, and $240 from the supply dealers, delivered; 12x12x12 inch, $248 to contractors.

Textile mill construction and other industrial building is calling for increased quantities of common brick at Providence and Pawtucket. Local dealers are quoting common brick, delivered, $20 to $24 a thousand; face brick, $50 to $55.

New Building Records at New York

Spring opened at New York with plans filed at the local building department for work to an amount of $1,250,000—one day's operations. The Metropolitan Life Insurance Co. approved loans in one week for more than $3,000,000 for residential work on Long Island. Sak & Co. have plans in preparation for a new 11 story brick and limestone department store on Fifth Ave., to cost $4,250,000.

The Building Trades Employers' Association is seeking to reduce wages to a $6 a day level for day laborers instead of the present $7 a day basis. No definite decision has as yet been reached, and the workers' organizations are opposing the change. The Builders' Exchange at Buffalo, N. Y., has advanced a similar movement, with average reduction, if effected, to total ten per cent. Bricklayers, plasterers and other skilled workers are being asked to accept 90 cents an hour, instead of $1.

Brick Prices Lower

Wholesale quotations of common brick stand at $16 and $16.50 a thousand, in carload lots, on dock, for the best Hudson River grades, as against a $17 level of a few weeks ago. Raritan River brick holds at $16.50 to $17, wholesale. Dealers are asking around $20 for delivered material.

The arrivals from up state at New York are from 20 to 23 barges a week, and this rate is expected to be maintained until the demand warrants heavier shipments. Dealers are maintaining reserve stocks of from 10,000 to 20,000 brick.

Local supply yards quote as follows on interior partition tile:

Size, 2x12x12 inch, and 3x12x12 inch, 12 cents per square foot; 4x12x12 inch, 17 cents; and 6x12x12 inch, 19 cents. Contractors are paying 11 cents for the 4 inch material, in carload lots, as against 24 cents a year ago this time; 16½ cents is the wholesale figure for six inch stock, and 20½ cents for 8x12 inch. There is a discount, as well, in the latter figures of five per cent. for cash.

Heavy Construction in New Jersey

Reports from important cities in New Jersey show increasing strength in the building movement, with Newark and Trenton leading. The shore resorts from Long Branch to Point Pleasant have a spring program projected to aggregate over $1,000,000, with bulk of operations in residences. Plainfield will soon commence work on public and other structures to cost about $500,000.

Newark is running from $400,000 to $500,000 in plans filed with the building department, and more than 75 per cent. of the total is devoted to apartments and residences. Trenton is rounding out the month of March with about $100,000 in construction, exceeding both January and February. Camden is showing a pronounced increase in operations, as are other important districts in South Jersey.

Brick Scarcity in New Jersey

The past fortnight has brought a marked scarcity in the common brick supply in northern New Jersey. The "between seasons" time finds the Hackensack yards practically bare, and manufacturers are refusing orders simply because they can not fill them. The majority of the seasonal yards in this district will commence their 1922 production about April 10. The outlook is stated as very promising.

Brick is more plentiful in the Trenton section, and the large producers with steam-drying plants are commencing to increase manufacture for the spring season. The outdoor yards are arranging to start up early in April, just as soon as the likelihood of no more frost is a near-certainty.

Present New Jersey brick prices are:

Good hard common, at the kilns, Hackensack, $16 and $17 a thousand, and delivered, $19 and $20. Newark, for New York and New Jersey stock, $19 to $21; Paterson, $20; Morristown, $21 and $22; Montclair and Bloomfield, $18.25 to $20; Trenton, at the kiln, $16, delivered on the job, $18. Face brick is from $45 to $55. Fire brick, $70 to $80.

$50,000,000 for Philadelphia Construction

It is estimated that $50,000,000 will be expended for new construction at Philadelphia, Pa., during the coming months, and this estimate, made by a local builder, is based on the fact that contracts have been placed for structures to an amount of more than $10,000,000, to be started in April alone. Brick dwellings are the outstanding feature of local construction.

Reports from different eastern Pennsylvania cities show the following: Overbrook, spring dwellings, $3,000,000; Mercerburg, more than 60 new residences are now being built; Kingston, about 100 new dwellings will be constructed during the spring; Lancaster, with more than $250,000 in new buildings in March, well in excess of this sum is looked for in April and May; Altoona, heavy dwelling work will be started.

Philadelphia brick producers quote:

First grade common, $16 a thousand to contractors in carload lots; $17 to $18, delivered. Water-struck varieties, $28 to $30. Salmon, $13 a thousand. Face brick, $45 to $50, smooth and rough selections.

Hollow tile, to contractors in carload lots: 4x12x12 inch, $95 a thousand; 8x12x12 inch, $175; 12x12x12 inch, $255. Supply dealers are quoting $135 and $140 for the first noted, delivered on the job.

Baltimore Forges Ahead

Heavy construction continues at Baltimore, with dwelling operations receiving the major share of attention. Blocks of

(*Continued on page 537*)

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

POSITION OF THE GERMAN POTTERY INDUSTRY

IN VIEW of the conflicting statements that frequently appear in the press as to the price policy adopted by the German pottery industry, the following may be of interest:

It is important to remember that the price policy followed by the German pottery after the war has undergone many changes. It must also be borne in mind that the policy followed by the different branches and sections in regard to the invoicing of goods, minimum export prices, and so forth, fluctuated—and still does so—considerably. The organization of the porcelain industry, for instance, passed a resolution in 1919 compelling sales to foreign countries to be made in the currency of the country in question and to so adjust prices that they were approximately 100 per cent. in excess of pre-war prices. The application of the principle was as follows: In calculating the export price, two-fifths of the current inland price was converted at the normal peace rate of exchange. Thus, by way of example, a porcelain figure which cost, say, 20 marks in 1914 (or $5) and 100 marks in 1919, was sold to America at $10. An entirely different mode of payment was employed by the tableware (china) industry up to last year. All export prices were in dollars and were calculated by adding 150 per cent. to the pre-war inland price. This, however, referred to shipments to the United States only—the other countries being allowed a so-called "valuta rebate" on the strength of their lower exchange rates.

New System of Figuring Export Prices

Lately the system of figuring export prices on pre-war or current inland prices has largely been discontinued in favor of a different scheme which has also been adopted by other industries. First of all it has once again been decided to stipulate invoicing in the currency of the importing country. Most of the branches have a so-called *Fachausschuss* or Expert Advisory Board which calculates and fixes export minimum prices for the different products of its special branch. Control of prices and other stipulations are in the hands of a so-called *Preispruefungsstelle* or Price Examining Bureau while the *Aussenhandelsstelle* (the Foreign Trade Control Board) is the official body representing control proper. The whole scheme is an intricate apparatus of joint control by self-governing bodies created by the industry and the government—both organs being in many cases closely connected by personal union.

The determining factor in fixing the export minimum prices referred to in the beginning is now the strength of foreign competition and market prices in the respective importing country. Representatives of German firms abroad, agents, commercial travelers, banks, the trade periodicals and daily press, and so forth are the channels thru which the control bureaus are posted on the trend of the market. The prices thus obtained serve as a basis for calculating the minimum export prices. Broadly speaking, these officially sanctioned minimum prices cut foreign quotations by say, five to ten per cent.

No Direct Tax on Pottery Exports

There is no direct tax on German pottery export sales. There is, however, the so-called *"Soziale Ausfuhrabgabe"* or Social Export Levy—a product of German post-bellum pseudo-socialist labor legislation for the proceeds are to be spent in connection with social welfare schemes, such as cheaper clothing and foodstuffs for workers, extra or increased food allowances, for the lowering of the domestic price level of certain commodities, and so forth. This levy ranges from nothing to ten per cent. of the invoice value and averages seven per cent. for stoneware and earthenware, and six per cent. for table and other china. The rate for pottery scrap and old material is ten per cent. but the revenue derived from this class is but meagre as export shipments are insignificant. Most of the rates for the different products were considerably lower previous to November 1, when they were raised to their present level. For table china, for instance, the rate was three per cent. or one-half of the present rate. To cover operating expenses, and so forth, a relatively small amount is charged for each permit, amounting to 0.4 per cent. for table china.

Customs Restrictions Hamper Germany

The steadily increasing severity of customs restrictions by numerous foreign countries is much complained about and a partial softening of the world's market prices for many commodities registered. At the Stoneware Convention at Bonn held during the early part of the year the percentage addition to base prices was further increased 33⅓ per cent.

A noteworthy decision has been taken by the foreign trade control bureau in regard to coarse pottery which will undoubtedly prove of interest to American manufacturers and importers. It appears that grave complaints as to the inferiority of certain grades of German pottery have latterly been lodged by foreign buyers. Up to recently, the control bureau strictly refused granting export permits for what to all purposes and intents constituted "junk" unless it was explicitly declared by the foreign customer that he was fully aware of being supplied with inferior ware. The control bureau has now decided to discontinue granting export permits for that class of goods as it was found that such ware was frequently changing hands abroad without due attention being called in closing deals to the inferior quality, the blame thus falling on the German industry whose good reputation is likely to suffer considerably in that way.

German pottery exports during 1920 amounted to 382,377 tons valued at 1,114,880,000 marks comparing with imports totaling 54,947 tons. Exports and imports covering the period May-November, 1921, are given as 331,686, tons (value 1,075,241,000) and 29,169 tons (value 52,597,000 marks), respectively.

ENGLISH EXPORT TRADE IMPROVING

A decided improvement in the pottery industry (particularly the export end of it) is being noted in London this spring and the pottery export manufacturers report that the United States market for this trade is excellent. One world-famous firm with connections around the globe has not yet lost one single day's work. This, of course, is an exception since many factories have not done a full week's work in every month. Manufacturers of tile and kindred lines are working four days a week now.

Altho new orders in the pottery industry in England still are on a restricted scale, the outlook is now very much more promising. One significant fact is seen in the reduction of unemployment in the pottery business, this now being down to only 14 per cent. But there still is considerable short time. The firms finding themselves with plenty of orders coming along are those turning out high-grade goods in china and earthenware.

A revival in the "Cinderella" branch of the pottery industry after a stagnation of at least a year, is being hailed with delight. This "Cinderella" section is made up of the jet and Rockingham lines. It has provided householders both in England and in other foreign countries with the common brown and black teapot and similar utensils for the home. Owing to the general trade depression, and the supplanting of the clay made article by metal and enameled goods, as well as the high prices asked, these "Cinderella" teapots fell away so far as demand was concerned. Now they are regaining their former popularity to the detriment of metal and enameled ware.

Last December the pottery manufacturers were well in the dumps and, in order to start something, they abolished their 30 per cent. "plusage," which represented a net decrease in prices of some 23 per cent. This had no immediate effect but its influnce is now being felt in the stimulated demand and the decreasing unemployment.

The pottery nabobs in England say the prospects are now quite promising and most of them are preparing to get back to at least a semblance of normal. Many of them are taking advantage of the British Industries Fair now being staged at Olympia in London to exhibit recent specimens of the pottery art and to boost business. They are reporting satisfactory results. The tile manufacturers are exhibiting tiles and associated goods at the Birmingham section of the fair in conjunction with the hardware trade and they say that, so far, they are satisfied with the progress that is being made as a result of the advertisement effected.

* * *

STRIKE WILL NOT AFFECT POTTERIES

Apathy that has been experienced in the domestic pottery trade during the early weeks of the year seems to have disappeared, and plants thruout the East Liverpool district are now operating on practically normal schedules with slight exceptions.

All the larger plants in the East Liverpool territory are working on normal schedules, and some of the smaller plant operators assert that shipments for the first quarter of 1922, in dollars and cents, exceed the value of shipments for the corresponding quarter during 1921.

There are particular instances, however, where manufacturers have declared that the amount of new business they are in receipt of is not sufficient to operate their plants on normal schedules as yet, however all potteries in the East Liverpool territory are operating, save the No. 2 plant of the Potters Co-Operative Co. It may be that this shop will be placed on the active list ere long.

Salesmen now on the road have been forwarding some rather favorable business to their home offices, and the East Liverpool district has not been without its weekly list of visiting buyers at any time this year. These buyers range from those in charge of china departments in department stores to the larger jobbing distributors.

Wants are being anticipated. That is to say the trade is ordering for from 30 to 90 days' future delivery. While there may be some merchandise available for immediate delivery, such requirements as border patterns take a longer time to prepare for shipment.

The threatened coal strike is not expected to concern the East Liverpool pottery district to any great extent. Only a few kilns in this district are being fired with coal, the majority being under oil and gas fuel. However, those manufacturers who do use coal for kiln purposes have been accumulating reserve stocks which are considered sufficient to fire these kilns for from one to two months. There is an ample supply of gas for kiln firing, while reserve stocks of oil are adequate for all purposes.

The National China Co., at Salineville, Ohio, has perhaps three months' supply of coal in stock, so this volume insures the continued active operation of this plant.

Potteries at Sebring have been accumulating reserve stocks of coal for some weeks. Every possible precaution has been taken by the Sebring manufacturers to continue active operations of all five plants there.

The W. S. George Pottery Co., at East Palestine, has been accumulating coal stocks for a considerable period.

Opinion of all manufacturers seems to lean toward a continued increased demand for merchandise. This in turn would indicate steady activity in all generalware potteries.

So far as can be learned, there will be no new kilns erected in the East Liverpool district this year. There is some talk of several small potteries being erected in the south, but these will manufacture either art or stoneware lines.

The stoneware potteries in the Crooksville, Ohio, district are not working on normal schedules. These shops have been inactive for many weeks. Only six of the dozen stoneware potteries there are working, and these on part schedules only. The plant of the Crooksville China Co., however, is doing a good business.

It may seem odd to some, but it is a fact nevertheless that some potteries in the East Liverpool district have business on file for fall delivery, and others have unfilled orders which were booked in January.

From all surface indications, the general business outlook for the entire East Liverpool pottery district seems very bright.

* * *

INVESTIGATES WASHINGTON'S WHITEWARES

In order to keep in touch with the needs and development of the local ceramic industry, the ceramist of the Northwest Experiment Station of the Bureau of Mines at Seattle, Wash., will maintain close contact and cooperate as much as possible with those engaged in this industry. He will conduct occasional short investigations on such subjects as a study of the whiteware possibilities of the State of Washington, a survey of the raw materials for a glass industry within the state, and such others as may present themselves in the course of events.

* * *

DISCOVER CHINA CLAY IN MISSOURI

A valuable and extensive deposit of china clay was recently discovered in Butler County, Mo., by Earl G. Doane, mineral engineer, and he, with John R. Boyden and Grover Dalton, all of Poplar Bluff, have incorporated the Missouri Clay Mining Co. with a capital of $100,000. 640 acres of clay land north of the city have been purchased and mining of the product has been started.

Mr. Doane declares that tests made on several carloads of the clay sent to a Pennsylvania plant show that it is not

(*Continued on page 562*)

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

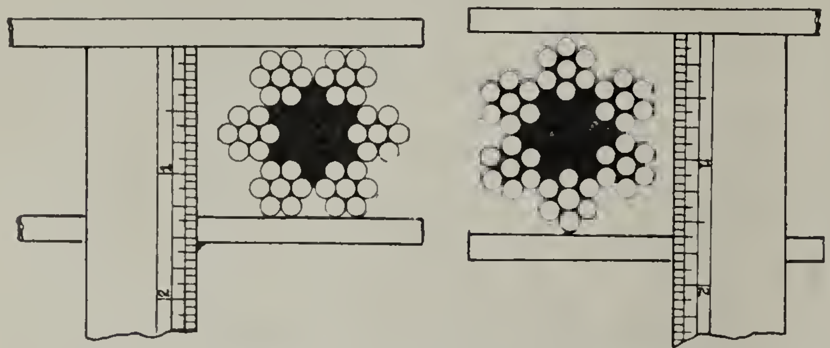
IMPORTANT INFORMATION ON WIRE ROPE

Clay plants purchase a considerable quantity of wire rope. One plant spends over $2,000 for wire rope annually. Thus the purchase of wire rope is important in consideration of the quantity used in the industry—but it is more important because of the great opportunity to make mistakes in securing the proper type of rope and in securing from the manufacturer the rope ordered.

Almost every set of conditions and uses requires a certain type of wire rope, and general recommendations are impossible. Tensile strength, flexibility and resistance to abrasion are three very important factors in wire rope, and each of them must be considered when this material is purchased. The life of the wire rope depends principally upon the speed at which it travels and the diameter of the drums and sheaves over which it runs. The larger the diameter of the drums and sheaves, the longer the rope will last. The wear increases with the speed, therefore it is better to increase the load, within the safety limit, rather than the speed. The user of wire rope can only obtain the best results by securing the most suitable rope for his particular requirements. The following data, namely, greatest load, average load, speed of rope and size of drums and sheaves, must be furnished the manufacturer before he can recommend a rope to meet the user's requirements. If the rope is to be used on an incline or for haulage, the elevation in 100 ft. and the greatest degree of inclination at any point must be given.

The strength and wear that wire rope will give depends primarily upon the material of which the wires composing the rope are made. The materials used in the manufacture of wire rope may be grouped into five main divisions: (1) Iron, (2) crucible cast steel, (3) extra strong crucible cast steel, (4) plow steel, (5) special or improved plow steel.

Iron rope is a soft and low tensile strength material, and is half again stiffer than steel rope. It is used only to a very limited extent. Crucible cast steel is a lower quality of high-grade steel rope, and is tough and pliable. Extra strong crucible cast-steel rope is of moderately high tensile strength and quite flexible. It is used for ordinary work and can be used on small sheaves and drums. Plow steel is a very high quality rope which combines lightness and great strength. It is used for heavy work where conditions permit the use of sufficiently large drums and sheaves. It stands abrasion better than cast-steel ropes. Improved plow steel rope is the highest quality obtainable, and is very useful where great strength, lightness and abrasive resistance are required.



The Right and Wrong Way to Measure the Diameter of Wire Ropes. The Diameter is Measured as Tho the Rope Were a Circle as Shown in the Right-Hand Drawing.

In purchasing wire rope, great care should be taken that the rope is purchased from a reliable manufacturer. In the past, wire rope of one grade has been ordered and a different grade delivered. In this way the consumer has been required to pay for a high-grade rope and was delivered a rope of lower quality. There is absolutely no way of distinguishing one wire rope from another as to quality. Recently, however, manufacturers in some instances have labeled their rope by an interior marker, composing part of the center strand. Consumers would do well to examine this marker.

In the use of wire rope great care should be taken that the grooves of drums or sheaves are perfectly smooth and ample in size. They should also be in perfect alignment with each other in order that the rope may not chafe on the side of the grooves. An exceedingly severe condition of rope service which should be avoided wherever possible, is reversed bending, the wire rope being first bent around a sheave in one direction and at some other section the same rope is passed around another sheave with a bend diametrically opposite.

The proper lubrication of wire rope is most important, but its importance is often overlooked. A thoro and continuous application of a good lubricating oil free from acids and corrosive substances of a consistency that will penetrate to the center of the rope, heavy enough to remain as a coat upon the outside, is an ideal lubricant. The life of a rope is materially increased by proper lubrication, as the lubricant prevents moisture getting into the rope and lessens the friction between the wires. Wire rope should be coated with grease when not in service, as otherwise the rope will rust very rapidly.

* * *

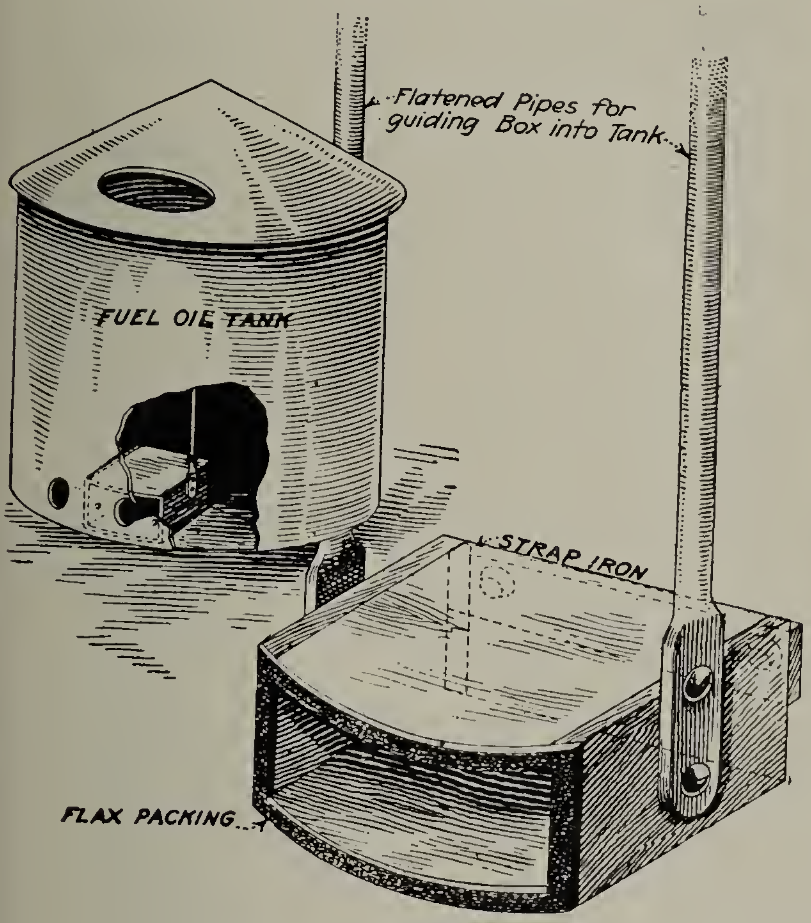
CONNECTING OIL LINE TO TANK

A crude tank, 20 feet deep and 30 feet in diameter had but one feed line going to the boiler oil burners, with the exception of a dangerous one that was connected to the water drain pipe of the tank. That, if used, might have put all of the boiler burners out of commission or carried water to the burners, as it is connected in the bottom of the tank.

The need of another oil line was evident, and the problem was solved by putting a four-inch connection in the side of the tank at the bottom. Not more than two or three buckets of oil were lost by the operation, as a pan was used to drain crude oil back to a small tank into which the oil is discharged from the cars.

A wooden box was made, 14 inches square by 8 inches deep, with the face made to fit the curvature of the tank. The edges of the box that came next to the tank were lined with flax packing and held in place with nails driven well in so as not to hold the packing away from the tank. A piece of strap iron was then screwed to the back of the box, and two ⅝-inch holes were drilled and tapped thru both. This plate was used for the purpose of pulling the box up to the side of the tank by means of bolts extending from the outside.

Next, two lengths of pipe, each flattened at one end, in which two holes were drilled, were bolted one on each end of the box, so as to guide and let it down to the desired position in the tank. Corresponding holes were drilled in the tank to match the tapped holes in the box, so as to draw the box with flax packing tight against the tank. The holes in the tank were carefully drilled with an air drill running at slow speed so as not to cause heat or produce a spark, which would subject the oil tank to the danger of fire. As soon as each hole was drilled, a wooden plug was inserted.



Connecting Extra Feed Line to Oil Tank.

When all was ready, the box was lowered, thru a manhole at the top of the tank, to its place corresponding to the holes drilled in the tank. The holes in the box were countersunk so as to be easily located when putting the bolts thru after the box had been lowered to position, the bolts being inserted in the holes in the tank after the wooden plugs had been pulled out one by one.

The box was then drawn up to the tank securely, the plug in the center hole was pulled, and the oil in the box was drained out. A four inch flange was placed against the tank and central with the box. Then the bolt holes were scribed, also the bore of the flange opening. The center was drilled out with a small drill, and the bolt holes were drilled. The flange was then placed after putting a ⅛-inch asbestos sheet gasket between the brass flange and the tank. The flange bolts were put in place from the inside of the tank by means of the flange opening in the tank and were drawn up tight. The flange was made of brass so as to obviate any chance of breaking when tightening. A nipple had been screwed tightly into the flange before bolting it to the tank, so as not to have any difficulty in screwing it in later, in case the flange should spring in bolting it to the tank. A valve was screwed to the nipple and then closed. The bolts were unscrewed from the box, leaving it free, and the bolt holes in the tank were tapped and plugged with patch bolts. The oil line was then put in service and has been in use ever since.—*Power.*

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Brick and Clay Industry

BURKE ELECTRIC CO.
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PITTSBURGH DETROIT BUFFALO

Sales Agencies
CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

Look at These Analyses

Analysis of Clay.

Silica	57.260
Alumina	28.890
Protoxide Iron	1.408
Titanic Acid	1.708
Lime	.470
Magnesia	.309
Alkalies	1.977
Water	7.643
Fusion Point	3020°F

Analysis of Coal.

Water	2.400
Volatile Matter	32.110
Carbon	60.619
Sulphur	.791
Ash	4.080

Twelve plants now in operation along the line making face brick, sewer pipe and other clay products.

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Desirable land carrying both the clay and coal veins can be had from Sixty to Eighty Dollars per acre.

Ask us for complete information today.
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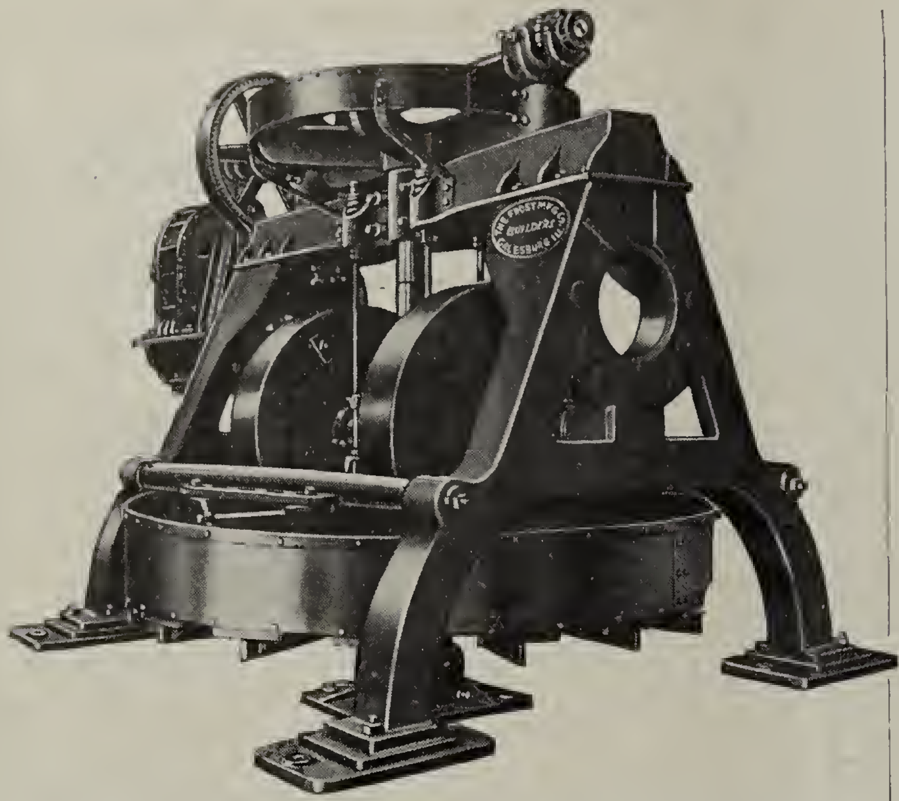

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Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

DARK COLORED PIPE FROM FIRE CLAY

1,036. *West Virginia—Could you advise us whether or not it is possible to burn salt glazed fire clay sewer pipe with a low volatile coal? The coal which we have in mind runs about* 18 *points in volatile, about two points sulphur, about six points ash and* 13,500 *B. t. u. What we are particularly anxious about is whether or not we could get a real dark colored pipe by burning with this coal. Most of the sewer pipe plants use a gas coal or a high volatile coal.*

Whether or not you can obtain a real dark colored sewer pipe by burning a low volatile coal is as much dependent upon your clay as it is the coal. We do not say that it is impossible to secure dark colored pipe with a low volatile coal and we do not hesitate to recommend that you experiment with this kind of coal.

To aid you in bringing about the dark colored pipe, we suggest that you can produce this by alternating oxidizing and reducing your kiln. This has a tendency to bring about a reddish-brown which increases in intensity with the repetition of these changing conditions.

We understand that a dull black glaze has been made by mixing crude oil with the salt. The color obtained in this case was probably due to the inclosure of particles of carbon in the glazed ware.

The fire immediately before salting should be clear, bright, and shining thru the bars. After the salting the kiln should be fired with reducing conditions, and then oxidizing before salting again. If this scheme is followed for several times, we believe you can produce the dark colors without a high volatile fuel. At least it is worth experimenting with these methods.

* * *

BURNING WITH OIL IN HAIGH KILN

1,037. *New York—We would like information as to the advantages or disadvantages of the fuel oil burning system in connection with the Haigh semi-continuous kiln, our kiln consisting of* 32 *chambers with a capacity of about* 33,000 *common clay brick each, and how burning costs compare with that of coal, and as to the time lost or saved in burning.*

This question was submitted to Mr. Haigh and he has volunteered the following information:

"The Phenix Clay Corporation inform us that they are burning 1,000 brick with one-third barrel of fuel oil, which is equal to 14 gallons per thousand brick and this is about the amount which they use in Chicago which is supposed to be the cheapest burning in the country.

"The saving in fuel depends, of course, on the cost of the fuel oil. Whether it is cheaper than coal or not depends on where it is being used and how cheap they can get the oil compared with the coal."

E. F. Hailey of the Salmen Brick & Lumber Co., Slidell, La., which is using a Haigh kiln, has submitted some interesting information.

"We are burning 18,000 B.t.u. fuel oil (being the Mexican crude petroleum) in our Haigh continuous kiln; you doubtless know how our kiln is built; it is not separated in chambers but is one continuous tunnel. When we come to the distance of the chambers, however, we close it off with thick building paper. One of these divisions contains about 27,000 brick. It takes a No. 13 cone to burn our brick and our records now show us that we use about 1¼ barrels of fuel oil per thousand brick.

"Fuel oil in this section of the country is sold by the barrel of 42 gallons each; therefore, you can figure from this quantity what you might require to burn your brick.

"In addition to this fuel oil, we top the fire with fine coal and it takes about 70 lbs. of this fine coal per thousand brick. In our kiln, the direct fire from the oil is held on the brick for 48 hours only; of course, the heat is drawn forward and used to heat the brick as we get to them.

"We give you next a little schedule of what it is costing us to burn our brick which we trust you will understand.

"To make one round in our continuous kiln in 33 days, it takes:

1 Foreman 90.00x33		$ 99.00		
30				
1 Head Night Burner, 2.25x33		74.25		
3 Daily Burners, 3x1.90x33		188.10		
2 Top Feeders, 2x1.50x33		99.00		
1 Coal Hoist, 1.50x33		49.50		
1 Door Man, 1.25x33		41.25		
1 Round in Kiln Burns 1,850M			$551.10	
Labor per M	551.10			0.298
	1850			
33x70 bbls.@1.60			3,696.00	
75 tons fuel oil @ $5			375.00	
Fuel for 1850M costs			4,071.00	
Fuel oil for 1M costs		4,071.00		2.20
		1850		
Total Burning Cost			2.200	
			0.298	
			2.498 or	$2.50

The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

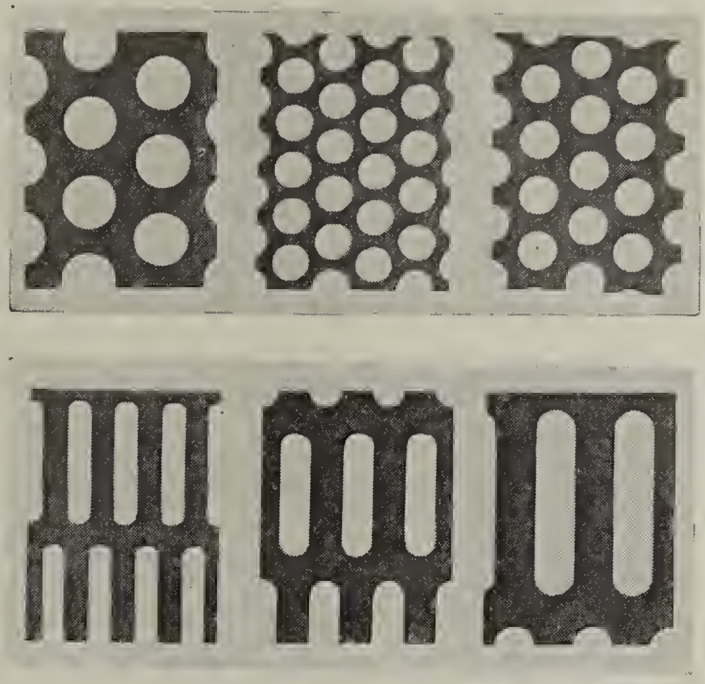
ABOUT CLAY DEPOSITS IN THE SOUTH

In the following letter, sent to Brick and Clay Record by J. C. Melcher, owner and dealer in mineral lands and cattle at LaGrange, Tex., some readers of our paper who are interested in acquiring a clay deposit may find some valuable information.

"I read with interest about the deplorable conditions in the feldspar industry, page 377, Brick and Clay Record of March 7, 1922, because we have many very fine, large, valuable deposits in this country, and the manner in which it is carelessly wasted and handled is also deplorable. If some northern or eastern people would come down here and handle some of these fine, white, clean deposits, they would find a bonanza for very little money. Most of it is right at and near good railroads in the kaolin and fuller's earth fields of Fayette County, Tex. I wish you would call the attention of your readers to it. The railroad companies, M. K. & T., headquarters at Dallas, Tex., and the S. A. & A. P. at San Antonio, Tex., will gladly give information about it.

"You are right when you say that a great deal more feldspar could and would be used if producers and consumers knew more about it. You are also right when you say there is a great deal of difference between feldspar and feldspar even if it comes

Perforated Steel Screens



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All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

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Chicago Trenton Kansas City
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Philadelphia Pittsburgh San Francisco

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MORE PERFECT WARE-

That is the result when BRISTOL'S Pyrometers are installed.

WHY?

Because they are accurately and ruggedly constructed and are therefore reliable. They indicate and record kiln temperatures thus enabling your burners to get more even burns.

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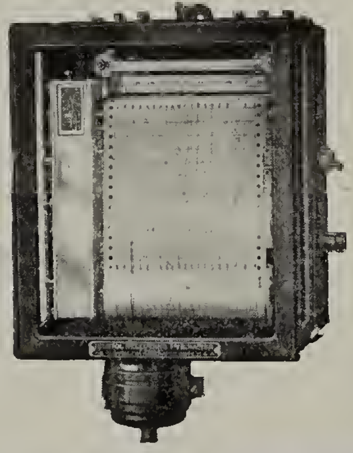

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Bulletins on Request

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STEVENSON CO.
Wellsville Ohio

from the same locality, and I also agree with you that the government should fix grade standards.

"I would recommend that the government fix about six classes. Three as to color and purity and three as concerning colors and impurity, and state what colors and impurities are harmful. Small packages should be prepared for samples, properly labeled and described so that each producer can get the standard samples for comparison with what he has or produces. He certainly would learn a great deal and save money and worry, besides giving the world more good material and better ware. Here in Fayette County, Tex., nearly every deposit has different qualities. Some of them have a good deal of soda and easily make a clean white glass glaze, while others make an almost clear transparent glass. Then we have kinds that are stained with iron oxides which make good pink colors and some which contain yellow chrome or other metal oxides and make most beautiful rainbow colors. There are even different qualities and colors in one and the same pit. All these things should be learned and made use of and those things avoided which are not useful."

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

H. B. SMYTHE PASSES AWAY

Henry B. Smythe, age 73 years, a pioneer citizen of Vanderburgh County, Ind., died recently at the home of his daughter, Mrs. Sam Bell, near Evansville, Ind. He leaves his widow, and four children. Smythe was reared and educated in Evansville. He operated an extensive tile factory at Smythe's Station for several years and was a pioneer in the field there.

WIFE OF BRAZIL BRICK MAN SHOT

On March 29 the startling news was received that Mrs. W. J. Snyder, wife of the president of the Brazil (Ind.) Clay Co., was killed when two Koreans attempted to assassinate Gen. Giichi Tanaka at Shanghai, on March 28. Mr. and Mrs. Synder were making a trip around the world and Mrs. Snyder was just getting off the ship at Shanghai and was not more than 20 feet from the Japanese general for whom the bullets were meant. The assassins were caught. Mr. Snyder has had the misfortune of having his mother, father and son all killed in accidents.

MR. AND MRS. GREEN TO VISIT EUROPE

Mr. and Mrs. A. P. Green are leaving April 11 for a two months' visit to Europe. It will be a combined business and pleasure trip. Mr. Green is president of the fire brick company at Mexico, Mo., bearing his name.

L. N. JOHNSON CHANGES POSITION

L. N. Johnson, formerly of Corunna, Mich., has taken charge of the Bradley Fireproofing Co., Inc. of New York. He will reside in South River, N. J.

BIRMINGHAM MAKING MUCH HOLLOW TILE

The Birmingham (Ala.) Hollow Tile Co. is now enjoying a good business, according to R. L. Gamewell, manager. He says his company is expecting a good business this year.

This company has recently installed two 16 by 40 silos at the new state prison, Camp Kilby, near Montgomery, Ala., each having a capacity of 180 tons. This company also recently built two silos at the state insane hospital farm near Mt. Vernon, Ala., and two others at the state insane farm at Tuscaloosa, Ala.

"Last year we did not operate from January to May," said Mr. Gamewell, "but we have been operating on full time the past winter. Last year was a very bad one for silos, but now we are putting on a silo campaign and expect to get good results, as the farmers of the south are realizing more and more every day the importance of the silo on their farms.

"Last year very few buildings were built in which hollow tile were used. Conditions in this respect are much better now, and the prospects for the future look encouraging," he said.

The market for Birmingham made hollow tile is not confined to this locality alone. The product is now going to eight southern states, and the orders are being increased. At the present time Birmingham hollow tile makers are figuring on a good silo business in North Carolina and a few in other southern states.

OUTLOOK BRIGHT IN BIRMINGHAM

The sewer pipe works of the Birmingham, Ala., district have been working on full time all along, never having closed on account of the stringent money market which has swept over the country. And these plants are finding a good market for their products. They do business in practically all of the southern states, and their business is on the increase. One clay pipe maker said, "We are expecting a much better business this year than any we have experienced since the close of the world war."

At the present time a number of southern cities are extending their sewer systems, and hence are ordering much clay pipe from Birmingham makers.

In Birmingham and in various places in the south there is a good demand for Birmingham made face and building brick, and brick manufacturers say building is on the increase. In this section more brick homes are being built at this time than ever before in the history of the south.

Florida and some of the other southern states are building a number of miles of brick paved roads, and this is creating a market for the paving brick makers of the Birmingham district.

SANTA FE GRANTS SPECIAL CLAY RATES

Special rates for clay transportation have been granted by the Santa Fe for the shipment of clay from Alberhill, California, to Redondo Beach. It has been discovered that the clay of the deposits of the Alberhill Coal and Clay Co. are of special value in connection with the oil-well drilling operations. For this reason the Santa Fe has granted a special rate of 12 cents.

TO OPEN PLANT LONG UNUSED

J. H. Canoles, the new manager of the Remillard Brick Co.'s plant at Pleasanton, Cal., is renovating the plant, rebuilding the kilns, and installing new machinery, preparatory to enlarging the productive capacity of the plant. Altho this company has been running steadily during the season just closed, this improvement is necessary in order to meet the growing demands of the trade. The Remillard people are also preparing to re-open their plant at San Jose. This plant has not been used for several years, but they find it now necessary to re-open it to supplement the work of the Livermore plant.

USE OF BRICK IN CALIFORNIA GROWING

While the run for the kilns during the winter season has been somewhat more than usual, the prospects of the season already are such that improvements and extensions are being made in practically all the plants of California, and operations are being hastened for the opening of new plants. One cause for the constant and growing demand for clay

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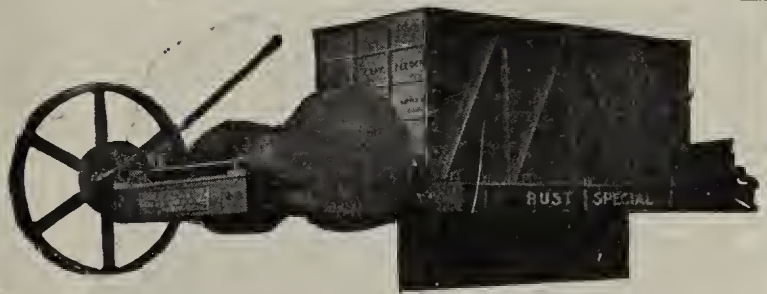

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products thruout the state, has been the fact that the prices in California have been comparatively low, and in comparison with other building materials, clay products may be said to be the cheapest. A slight raise during February offers a little more inducement of profit to the trade. While prospects are encouraging in San Francisco the greatest encouragement for the industry is in the south. In some lines of building they have thoroly acquired the brick habit, notably in the construction of packing houses.

USE MUCH TILE ON CALIFORNIA FARMS

Farmers of California are making great use of hollow tile in the construction of their farm buildings.

It is estimated that within the past 12 months the use of hollow tile manufactured in Los Angeles plants has increased about 15 per cent. in the farming districts. The tendency among up-to-date farmers is to adopt fire resisting materials in the construction of buildings for housing live stock and for the storage of farm products. This is giving the owner of the stock of farm products a greater factor of safety and also enabling him to secure a much lower fire rate.

Packing houses in the farm districts, where fruits or vegetables are either packed or stored are also being built of hollow tile. Several disastrous fires in recent years have shown the necessity of greater safety in the construction of this type of building. There is a great market in the farm communities for brick and hollow tile, and the manufacturer or dealer of these products cannot go wrong in properly advertising his goods to the farming communities.

CHARTER OAK STARTS WORK

The Charter Oak Brick Co., Hartford, Conn., will begin manufacturing brick starting about the first week in April. Because of demands and also because no manufacturing was engaged in last summer the stock on hand is practically depleted. The prevailing price at this time is $15 for the general run, a price less than half that which prevailed a year ago.

PLANNING FOR BIGGEST YEAR

Miss Josephine Murray, one of the firm of the Richard Murray Brick Co., Berlin, Conn., is optimistic over the outlook for business for the coming season. She declares the company is planning for the biggest year's business in its history. The boilers and kilns have been thoroly overhauled and will start up within a few days, or as soon as weather conditions permit.

SUSTAINS $25,000 FIRE LOSS

The plant of the Dunbar Brick Co., Augusta, Ga., located a few miles from the city limits, was damaged by fire recently, with loss estimated at about $25,000, including buildings, equipment and stock. The fire was caused by a blown electric fuse. It is planned to rebuild and have the plant ready for full operation at an early date. H. H. Stafford heads the company.

BUYS PLANT TO MAKE MISSION TILE

The B. Mifflin Hood Co., of Atlanta, Ga., has announced the purchase of the Rome (Ga.) Brick Co. The plant will be used to manufacture true mission roofing tile, similar to that produced in Spain. B. Mifflin Hood, president of the company, has written as follows:

"We plan to export this mission roofing tile in large volume to the Latin countries in America, where Spanish mission tile is in so great favor. The very handsome estate of Deering at Miami, Fla., imported from Cuba the tile from old buildings where they had aged, and used them on ıe buildings at Miami, as no tile made in America could give ıe true architectural mission effect desired.

"The climatic conditions and the architectural feeling of ities of Florida and those lying on the Gulf and South Atıntic ports, are begging for tiles that reproduce the effect f countries bordering on the Mediterranean, and it is our lan to manufacture tiles at this plant so as to reproduce hese effects, as the nearest source of supply is California and he freight rate is so prohibitive that this product is unable ɔ reach the southeastern market.

"We have all of our plants running full capacity, includıg those manufacturing Quarrie floor tile, chemical stoneⅴare, roofing tile, hollow building tile and face brick, and ur Atlanta business for January doubled and for February uadrupled.

"We are expecting 1922 to be the best stabilized peace year ince the signing of the armistice, and hope that plants in ıther sections of the country are doing equally as well."

GEORGIA PLANT CHANGES HANDS

The Ludowici (Ga.) Brick & Tile Co. has been acquired ɔy C. J. McDonald & Sons, and will be incorporated soon, it is said, as the McDonald Brick Co. Improvements and ıdditions to the plant have been made which will increase the present capacity of 60,000 brick a day. A site of 138 acres of clay land adjacent to the plant supplies the raw material, which is unsurpassed in quality and the supply is almost inexhaustible. The new owners are very optimistic over the outlook.

IDAHO COMPANY SHOWS PROFIT FOR 1921

The auditor's report presented at the annual stockholders' meeting of the Idaho Fire Brick Co. of Troy, Ida., showed the sales for 1921 to be a little better than 50 per cent. of the average sales of the four preceding years, and that the plant had been operated at a profit. During the year the company bought in 132 shares with a par value of $100, thus reducing the investment from $66,029.17 to $52,562.50. Prospects for 1922 are brighter than they were at this time last year.

Election of officers resulted in the following: C. B. Johnson, president; G. C. Hoyt, vice-president; William M. Duthie, G. M. Sadd and Charles Amos, directors; G. B. Watson, general manager, secretary and treasurer.

MAY ABANDON BRAZIL TO MOMENCE R. R.

Brick and clay plants along the Indiana coal road extending from Brazil to Momence, are watching with interest the Indiana public service commission to put the road back into operation. Two members of the commission recently returned from Chicago where they obtained from the Federal Court their authority from the C. I. & W. railroad to continue operation of part of its route between Brazil and West Union, Indiana. A proposal to abandon the entire division is pending before the commission. In case this is done several large clay plants, including the Dee plant at Mecca, will be left without railway facilities.

MAKING READY FOR SEASON'S RUN

The Southern Brick & Tile Co., Louisville, Ky., has been down for repairs, remodeling its dry house, overhauling machinery, gas producer system, and other equipment, so as to be ready shortly to start on a steady run.

SHIPPING 10M TO 15M BRICK DAILY

The Progress Pressed Brick Co., according to Andrew Hillenbrand, Sr., is operating steadily. Demand is not heavy, but on floating orders is averaging 10,000 to 15,000 brick a

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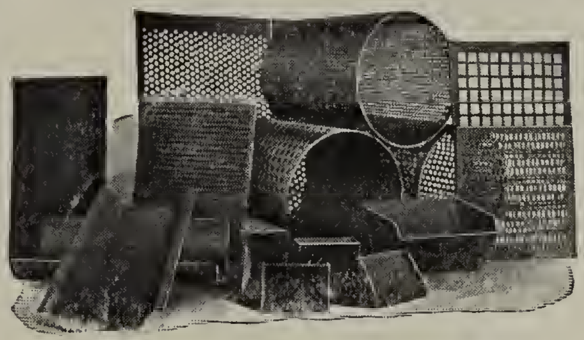

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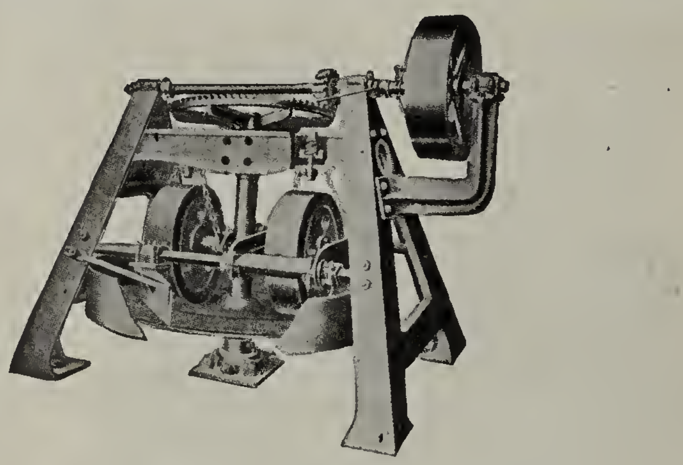

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DES MOINES, IOWA

day, which is fair considering the weather. Mr. Hillenbrand reports that he has put five more cars of coal in his coal yard, and isn't worrying about any coal strike.

ORGANIZE CLAY COMPANY AT PADUCAH

The Paducah (Ky.) Clay Co. has been organized with a capital of $25,000, to operate a local plant for the manufacture of brick and other burned clay products. The company is headed by E. I. Milburn, Elmer C. Ries and James S. Escott, all of Paducah.

$50,000,000 ROAD BOND ISSUE DEFEATED

Louisville, Ky., and other sewer pipe manufacturers were a little bit disgruntled over the defeat of a $50,000,000 road bond issue at Frankfort, Ky., on the last day of the legislature, it being reported that the bill was killed as a result of political retaliation, to even up the score on pet bills of the opposition that were killed. This road bond issue would have given a lot of men work, and created a good demand for materials.

PRAISES WORK OF TILE MANUFACTURER

Following the completion of the 13 buildings for the U. S. Public Health Service at Dawson Springs, Ky., the P. Bannon Pipe Co. of Louisville, who furnished the tile for these buildings, received an excellent letter of commendation from Algernon Blair, the contractor. In this letter, which the P. Bannon Pipe Co. used for publicity in the Louisville Evening Post, the contractor gives the company a considerable share of the credit for making possible the completion of the buildings on time.

F. A. CROCKETT SELLS BRICK PLANTS

The brick plants of F. A. Crockett at Guilford, Me., have been sold to A. O. Robbins. Mr. Robbins represents a group of capitalists who are organizing a company to operate the yards, as soon as the season opens, with a full crew.

SAVAGE MOUNTAIN REELECTS OFFICERS

At the annual stockholders' meeting of the Savage Mountain Fire Brick Co., held at the company's office, Frostburg, Md., March 27, the directors were all reelected, with the addition of their sales manager, Clarence Overend, who was elected to fill the vacant place of Mr. Gorsuch, deceased. At the directors' meeting, which immediately followed the stockholders' meeting, John A. Caldwell was reelected president and all other officers retained their positions.

ACQUIRES PLANT IN ALABAMA

The Russell Clay Manufacturing Co., Equitable Building, Baltimore, Md., recently organized under Delaware laws with a capital of $600,000, has acquired a plant at Alton, near Birmingham, Ala., for the manufacture of vitrified brick. Additional equipment, including cars, and so forth, will be installed at the works, and it is planned to commence production at an early date. It is proposed to develop a capacity of about 50,000 paving brick per day. Floyd B. Powell represents the company.

OPEN SOUTHAMPTON PLANTS

The brick plants at Southampton, Mass., which have been shut down for many months, are to be reopened as soon as warm weather arrives, owing to the increasing demand for building brick. Over 300 carloads of brick are manufactured per season.

SELL MAKONIKEY PLANT

The site of the Makonikey Clay Brick works at Vineyard Haven, Mass., together with much adjoining property, has been sold to Roger W. Higgins of Boston and Thomas F. Nelson of Waltham, Mass., by the bondholders of the Clay Products Co. The sale is said to have been for $25,000.

A. P. GREEN EMPLOYS 400 MEN

The A. P. Green Fire Brick Co., Mexico, Mo., now has 400 persons employed. The plant is not yet running at full capacity and more men are being put on right along as room can be found for them. The company is experiencing a steady growth of business.

W. S. DICKEY MAY EXTEND INTERESTS

The W. S. Dickey Clay Co., of Kansas City, has secured an option on the S. M. Davis land, northeast of Rich Hill, Mo. The option has been held for some time, but announcement of it was not made pending further developments. The Dickey company, it has been announced, will put engineers in the field to fully determine the value of the clay deposit on this land before announcing definitely the reopening of the plant and more extensive operations. If the clay is found in the quantity and quality that is now believed, this industry will be one of the most important in Rich Hill in a few years.

CONDITIONS BRIGHT IN OMAHA

The brick industry in Omaha, Neb., during the past six weeks has made rapid strides and if the pace continues without any interruption, such as a coal strike would bring about, by July 1 of this year it will have returned to normal conditions, brick manufacturers as well as wholesale and retail dealers declare. The demand thus far, the dealers say, is far beyond their expectations.

So confident are the manufacturers that the demand will continue to increase for brick, the Ralph DeLong Brick Co. and Kritenbrink & Son, started operations with full speed ahead. The two other large brick manufacturers, Omaha Clay Works and Smith Brick Co., at this time have about 3,000,000 brick on hand and predict within a period of from 40 to 60 days they will have their plants running full blast.

"We are receiving double the number of inquiries and making twice as many sales as we did any month last year after June," H. W. Bubb, manager of the Omaha branch of the Hydraulic-Press Brick Co., declared. "Indications are excellent that the brick industry is returning rapidly to the normal status. By the middle of the year I expect every brick man in this section of the country to be well on the road to prosperity.

"Prices are just as low now as they are going to be. The demand has quickened and with the demand strong there can be no evidence of a further decrease in prices."

R. M. Gleason, assistant manager of the brick department of Sunderland Brothers' Co., said:

"The brick industry has picked up wonderfully during the past 30 days. People who are now planning to build their homes have found out after months of waiting that brick are not going down any more and are buying."

Wages paid by the brick manufacturers are practically the same as those paid during the war. Competition for labor, however, has become so keen that an increase of 25 per cent. in efficiency has taken place among the laborers, it is said.

Not only is the demand in Omaha increasing for brick, but similar conditions exist all over the state. The great percentage of brick shipped out into the state are those being used for the construction of garages and school buildings, it is reported.

FIRE DAMAGES SAYRE & FISHER

The Sayre & Fisher brick plant at Sayreville, N. J., was partially destroyed on February 25 by a fire of mysterious

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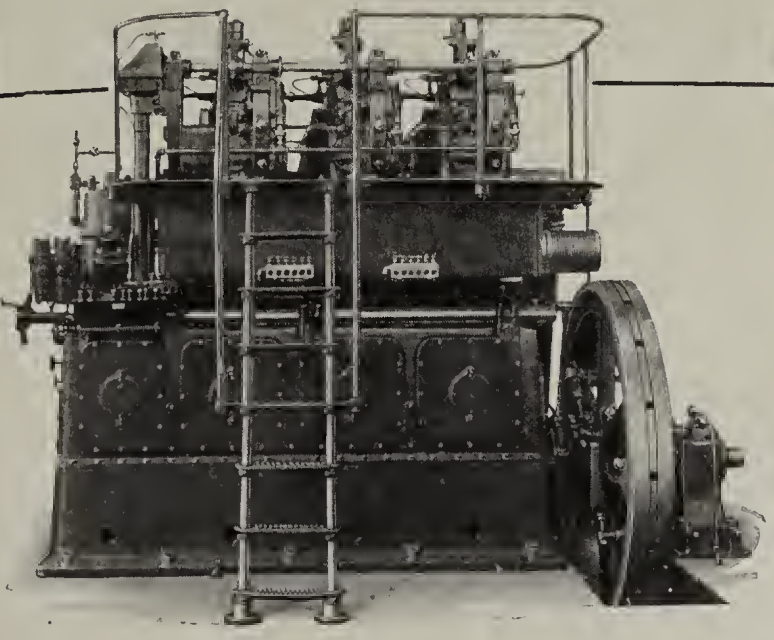

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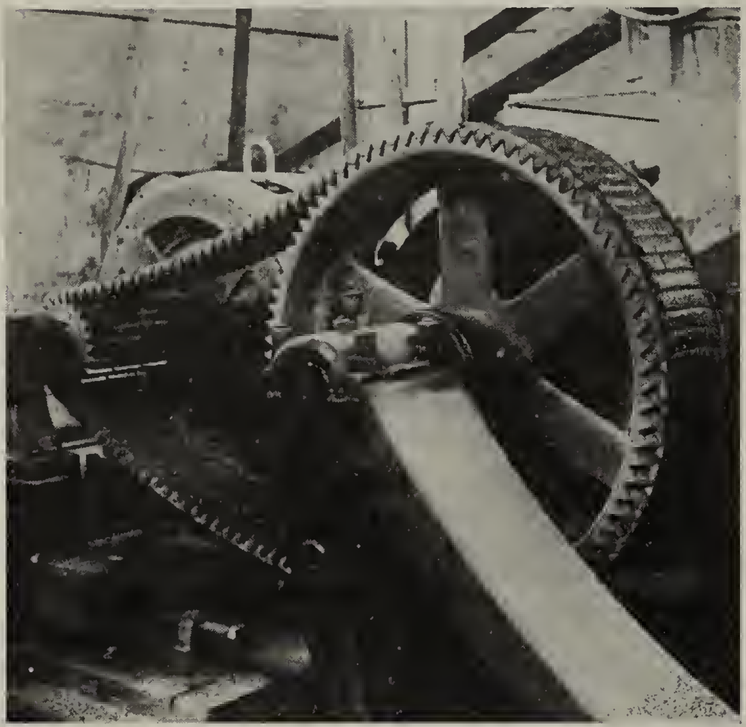

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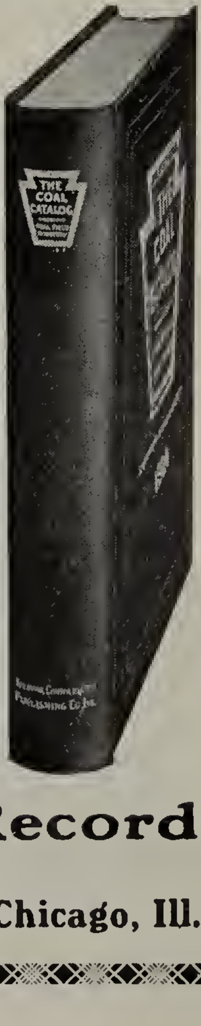


Brick and Clay Record
BOOK DEPT.
407 S. Dearborn St. Chicago, Ill.

origin. No insurance was carried, and the damage is estimated in the neighborhood of $40,000. The blaze broke out in one of the stock sheds, and in a few minutes the whole plant was in flames. The two local fire departments did efficient work, and it is due to their efforts that the plant was not entirely destroyed. An investigation is being made to determine if possible the cause of the fire, according to Douglas Fisher, one of the firm.

FIRE DESTROYS BIG PART OF PLANT

On March 2, fire at the plant of the Trent Brick Co., Trenton, N. J., destroyed a large portion of the works, resulting in a heavy loss and necessitating the closing down of the plant until rebuilding and repairs can be made. This will take a number of weeks and require considerable machinery replacement. The loss sustained was heavier than would have been the case if the Trenton Fire Department had responded to the call; thru misunderstanding, it is said, the department refused to cross the city line, the plant being located just outside of the boundaries in Ewing Township, and the fire was permitted to gain considerable headway. The plant has been giving employment to about 50 men, and was making ready for increased spring production. It is believed that the fire was of incendiary origin, and A. W. Goulding, treasurer and manager of the company, has offered a reward of $500 for evidence leading to the conviction of the person responsible for the disaster.

INCREASES CAPITAL EIGHT TIMES

The Duffney Brick Co., of Mechanicville, N. Y., has made application to increase its capital stock from $100,000 to $810,000.

McLAIN PLANTS OPERATING NORMALLY

Both the Buckeye and the Champion plants of the McLain Fire Brick Co. of Wellsville, Ohio, are operating practically at normal.

THREE ZANESVILLE, OHIO PLANTS START

The two Zanesville, Ohio, plants and the Ashtabula plant of the Burton Townsend Brick Co. resumed operations. The three plants employ 100 men each.

TO ARRANGE YEARLY PAVING PROGRAM

Paving brick interests are expected to figure in the controversy that is now in progress regarding paving in Cleveland. A recent report issued by the Municipal Research Bureau gives rise to the belief that before the authorization of the greater part of the paving contracts that are scheduled for the coming year, a careful survey will be made of the entire system in order that work may be done on the basis of definite annual programs.

BELDEN BRICK BEGINS

After being idle for two months the plant of the Belden Brick Co. near Uhrichsville, Ohio, resumed operations March 24.

A boom in brick manufacture is looming because of a revival of residential and business block building in cities in Tuscarawas County and others.

Sewer pipe business at the present time is not brisk, but the outlook for spring is good.

BANFIELD CLAY STARTS WORK

After an idleness of three months extending from the first of December the Banfield Clay Co. at Irondale, Ohio, resumed operations on practically normal basis recently, officials of the company announced. Operations at the Banfield plant will afford employment for approximately 100 men. Officials of the concern are optimistic as to the future of the industry. Business has been obtained to keep the plant in continuous operation indefinitely. This company manufactures hollow tile and other building materials.

WILL OPEN BRANCH AT COLUMBUS

The Canton Brick & Fireproofing Co., which has general offices in New Philadelphia, Ohio, announces the opening of a Columbus branch at 39 West Long Street, which will be under the charge of J. O. Forse, a graduate of the Ohio State University, formerly connected with the company in the manufacturing end of the business. The branch will handle both face and common brick as well as a line of fireproofing.

WILL BUILD LARGE BRICK SHEDS

The Columbus Builders' Supply Co., dealers in building materials and brick, has acquired a 12-acre tract on West Third Avenue which will be used for the construction of a modern supply yard. The improvements contemplated will be the building of warehouses, elevated tracks and storage bins. A number of large sheds will be erected for the storing of face brick. W. F. Kern, president, closed the deal and is in charge of the plans for improvement.

HIGH CEMENT PRICE FAVORS BRICK

With the opening of bids by the Ohio Highway Department, more attention is being given to brick paving as opposed to concrete. This is due largely to the high price of cement charged Ohio contractors as compared with the prices which are quoted in Illinois. There has been quite a controversy over the price of cement during the past few weeks, in fact, the Director of Public Service of Columbus has thrown out bids for a large quantity of cement to be used for street repair and will advertise again.

STARTS MAKING COMMON BRICK

Manufacturing of common brick has recently been begun by the Cleveland (Ohio) Clay Products Co. The company has announced that orders on hand will take the entire output for the next three months. The matter of increasing the plant's capacity is being considered.

START $125,000 IMPROVEMENTS

Improvements and additions to cost $125,000 have been started at its plant on West Tenth Street, Oklahoma City, Okla., by the American Brick & Tile Co. The principal addition is a new continuous kiln, which is expected to be completed by August. Officials of the company declare they will have the largest brick manufacturing concern in the state when the work is finished.

BESSEMER PLANT FILLS STORAGE YARDS

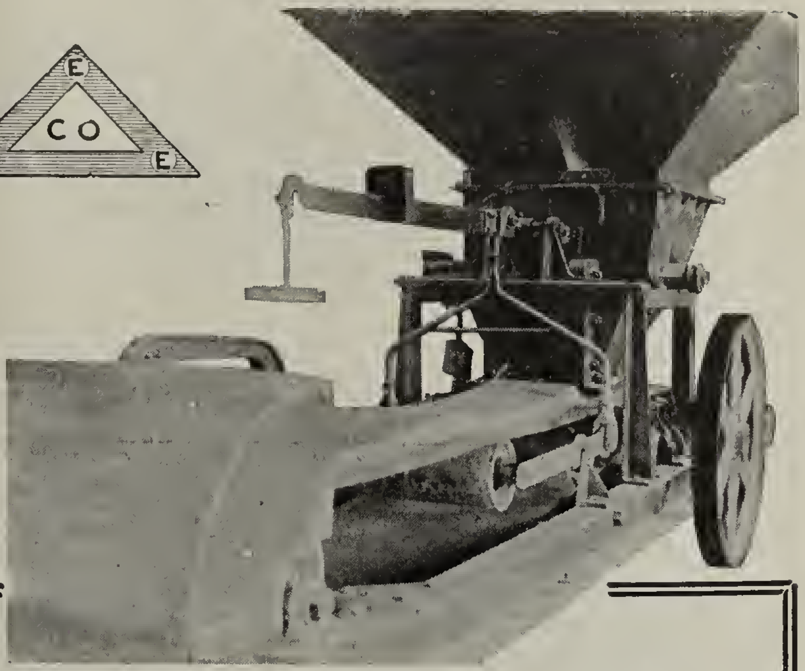
The old brick plant at Bessemer, Pa., closed down recently because of lack of space to store its products. The plant has been running in full for some time, and the stock has accumulated to such an extent that the plant was forced to suspend operations. It probably will resume operations again in May.

COAL STRIKE CAUSES NO WORRIES

Little fear of the coal strike is expressed by refractories manufacturers in the Pittsburgh district. At one time is was thought that perhaps a survey of the situation might be advisable but the majority of the refractories plants being located in non-union fields the plan was given up as unnecessary. Those plants that draw their coal supply from the union fields prepared to meet the strike and little damage is estimated as a result.

With the refusal of the unions and the producers to get to-

S E E CO



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The Poidometer insures you a better product through the better mix it gives your clay.

This machine shoulders all the responsibilities of your pug mill men and eliminates them.

Improve the quality of your ware with less cost. Write for our catalogs and let one of the SCHAFFER Engineers call and explain the Poidometer to you in detail. There will be no obligation.

SCHAFFER ENGINEERING and EQUIPMENT COMPANY
2828 Smallman St. Pittsburgh, Pa.

New Gasoline Lift Truck Has Many Uses

Photo of Clark Truklift shows low carrying platform (4,000 lbs. capacity) and controls conveniently located for operator.

Clark Truklift has unique construction features and wide range of usefulness; has 4-cylinder gasoline tractor engine.

Clark Tructractor Co.
1124 Days Ave. Buchanan, Mich.

E F F I C I E N T

Ability To Operate Continuously

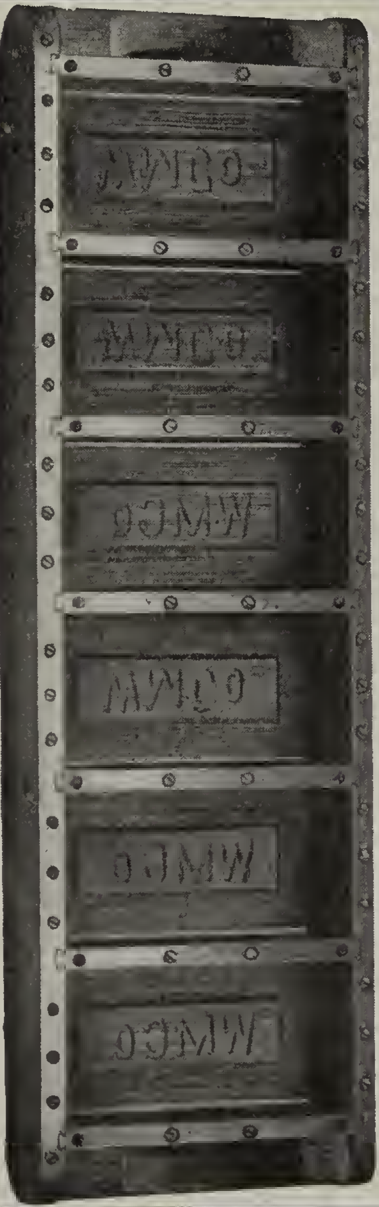
Ability of the One-Man Excavator to operate continuously is one of the large points of advantage that makes this machine invaluable in the clay pit.

Then too—there is economy and the saving of labor to be considered. The One-Man Excavator in many cases eliminates from 8 to 12 men from the pit. It requires very little power to operate. Gasoline or Electric power track, or caterpillar type mounting—seldom needs repairs.
An investment that even the small operator CAN and SHOULD make.

If your plant is one of 25,000 to 100,000 brick per day capacity, it will be worth your while to get our latest catalog.

Sent free upon request.

Bay City Dredge Works
Bay City, Mich.



ECONOMY EFFICIENCY AND PROFIT

Wellington molds insure clay products manufacturers of these three most desirable features. They are manufactured from clear, bone-dry rock maple or cherry timber, irons perfectly dove-tailed, rivets in partition irons to prevent curling and special screws that cannot loosen.

If you are in need of quality molds, we can supply you with all designs, sizes and types.

May we send you complete information concerning this product?

Ask for our catalogue also—on Barrows, Trucks, Cars

Wellington Machine Co.
Wellington, Ohio

gether on the question little hope of averting the strike is being expressed. No predictions are being made as to the time that the strike will last but it is the concensus of opinion that owing to the unusually hard living conditions and to the fact that the non-union fields will be able to keep up a necessary supply, that the proposed strike will be of very short duration.

TENNESSEE TO HAVE NEW BRICK PLANT

J. L. Jones, of Greenback, Tenn., advises that the Greenback Brick Co. plans the construction in the near future of a manufacturing plant to have a daily capacity of approximately 30,000 brick. Side tracks are to be installed at the plant and the average daily output at the starting of operations will be three carloads. Mr. Jones is principal owner of the business and will act as general manager.

SCOTT TILE CO. INCREASES CAPITAL

An increase in capital stock from $15,000 to $35,000 has been announced by the Scott Tile Co., Paris, Texas.

NEW TEXAS COMPANY ORGANIZES

The Palmer (Tex.) Pressed Brick Works, located in Ellis County, has been incorporated by Y. Barron, J. R. Beck and L. B. Griffith. The capital stock is given at $21,000.

BIG CONCERN TURNS TO OPEN SHOP

After a number of years of operation under the closed or union shop system in its terra cotta, sewer pipe and paving brick plants, the Denny-Renton Clay & Coal Co. of Seattle, Wash., has decided to throw off the yoke of union organized labor. Hereafter the plants of this company will be operated on the American plan. When this announcement was made, the unions naturally objected and took the usual course by striking. According to R. A. Swain, this difficulty has in a large measure been adjusted. He says, "We are just about ready to commence production with a non-union crew. Therefore, it is a little early to advise you of the general efficiency and satisfaction we are likely to obtain under the new movement. Our wage reduction is 15 per cent."

* * *

Mr. K. B. McCue, of Persinger, W. Va., desires to get in touch with the manufacturers of brick and tile machinery, as he plans to install a brick and tile plant.

ROHNSON BRICK TO START

The Rohnson Brick Works of Ranson, W. Va., is planning to start operations in from 30 to 60 days. This company has not been operating for some time.

PLANNING TO DOUBLE CAPACITY

The Princeton (W. Va.) Brick Co. has plans under way for enlargements at its plant for considerable increase in capacity. Equipment will be installed in the different operating departments, and storage facilities provided to double, approximately, the present output. Work will be placed under way at an early date.

INCORPORATE BRICK COMPANY

The Kraatz Brick Co. has been incorporated at Milwaukee, Wis., with stock consisting of 250 shares of $100 par value. Emil M. Kraatz, 508 Bradford Street; Edward Schroeder and Edward W. Demmer, all of Milwaukee, are the incorporators.

* * *

John S. McCannell of the Milton, Ont., Pressed Brick Co. Ltd., has returned after spending two months at St. Petersburg, Fla.

WILL BUILD TWO NEW KILNS

The Nova Scotia Clay Works Ltd. of Elmsdale, N. S., have decided to add two new kilns to their brick manufacturing plant at Elmsdale.

PILING UP STOCK FOR FUTURE DEMAND

The Ontario Sewer Pipe & Clay Industries Ltd., Mimico, Ont., have at present the largest stock of finished product in their yard in the history of the company. On account of encouraging reports from all over the country manufacturing is being continued. One new kiln was built in 1921 and the company has started another one this spring. They now have 40 per cent. greater output than in 1920.

BUILDING MODERN PLANT IN S. A.

News has been received from Benjamin Gaitan of Bagota, Colombia, S. A., that his company is putting up a new and modern brick plant in that city. The Colombians are very much interested in what America is doing in the clay field.

* * *

THE BUILDING SITUATION

(*Continued from page* 541)

from 20 to 40 two-story brick houses are in progress in different parts of the city, with permits running from $1,000,000 to $1,500,000 for this character of work alone.

Industrial work is coming back into its own in the city, March operations exceeding $700,000. Since the first of the year, factory and warehouse structures show a 90 per cent. increase, as compared with a year ago, according to plans filed at the local building department.

Common brick at Baltimore is priced as follows:

Delivered on the job, $20, best grade; contractor shipments, carload, $18. Salmon brick, $14 and $15 a thousand. Vitrified paving brick, three inch material, f. o. b. local yard, $36 a thousand. Water-struck, $29 and $30. Face brick, $45 and $50. Hollow tile, 4x12 inch, is $140 a thousand; 8x12 inch, $250; and 12x12 inch, $390.

Volume of Pittsburgh Building Growing

With the advent of warmer weather to Pittsburgh, building and construction work of all kinds has started off in earnest. New buildings are springing up everywhere and house construction is going on at a rapid pace. Building supply dealers reported a greater volume of business for February than they had had for a whole year during the period of depression. Face brick manufacturers are taking orders at a fairly good rate. Refractory supplies are still below normal in demand, but comment is that a favorable turn is now indicated.

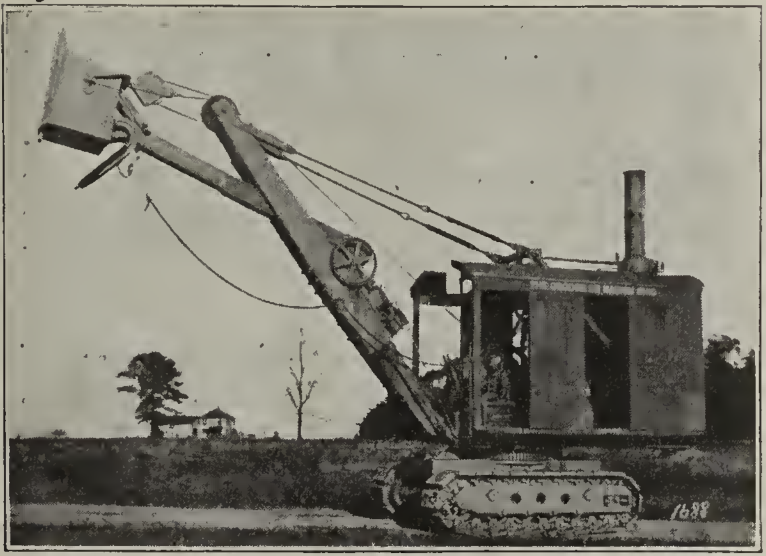
Nearly 200 permits aggregating a total estimated cost of nearly $1,000,000 were applied for during the last two weeks of this month and this brings the total for the year up over $6,000,000. That, however by no means is a safe estimate of the construction work that is going on.

Controversy Halts Work in Cleveland

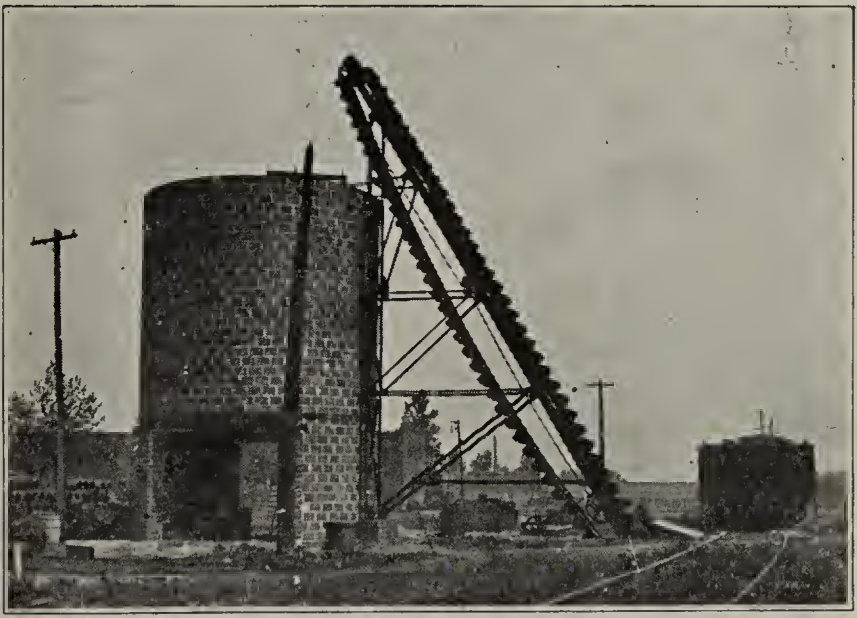
As yet no rift has appeared in the building tie-up, that has been in effect since the failure of negotiations between unions and contractors. From all appearances the contractors are making every effort to settle the controversy, but the unions are seemingly convinced that in view of the enormous amount of construction already authorized, an agreement can be forced ultimately which will restore the 1920 high water mark scale of wages.

Proof of this lies in the fact that D. L. Hoopingarner, executive secretary of the Building Trades Employers' Association, recently offered to place the entire matter in the hands of Judge Alexander Haddon for arbitration, meanwhile the unions were to return to work at 90 per cent. of last year's scale, the remain-

Steam Shovels
OSGOOD
Modern Excavating Machinery



The OSGOOD 29—1 yd. Revolving Steam Shovel with Continuous Tread Mounting demands your investigation.
Steel Truck Frame interchangeable for Continuous Tread or Traction Mountings.
Power Steering Devices; Vertical Submerged Tube Boiler; Easy Control Mechanism; Compact for work in close quarters; Horizontal Hoisting Engines; Makes a complete circle in a diameter of only 20 ft. and Convertible for Crane, Clamshell or Dragline Service are only a few superior features.
Revolving and Railroad Type Steam Shovels ¾ to 6 cu. yd.
THE OSGOOD COMPANY, Marion, Ohio, U. S. A.



Satisfaction
From every Sunbury installation come reports of satisfaction.
This should mean a great deal to you, Mr. Clay Products Manufacturer, if you are contemplating the purchase of a car unloader, because, WHAT THE SUNBURY WILL DO FOR ONE, IT WILL DO FOR YOU.
The Sunbury unloads from 30 to 50 tons per hour. It requires only one man to operate. It costs only a fractional amount for upkeep.
Let us know your requirements, and we may be able to actually save you money.
It won't obligate you to write us at least
THE SUNBURY MANUFACTURING CO.
SUNBURY, OHIO

ing 10 per cent. being placed in escrow pending the final decision of Judge Haddon. The unions flatly refused this proposal.

The possibility of open shop looms up more clearly with every passing day, Secretary Hoopingarner's recent statement to the contrary notwithstanding. The Chamber of Commerce is straining every effort to bring this plan into effect going so far as to publicly dub the controversy as "the annual Punch and Judy show of the contractors and unions," and suggesting open shop as the way out.

Chicago Declares "Landis Award or Open Shop"

Building in Chicago is steadily and surely going ahead either under the terms of the Landis agreements or on an open shop basis. The Citizens' Committee to Enforce the Landis Award reports that they are very much encouraged over the outlook and that contractors doing 85 per cent. of the work in the city have signed up with the committee to operate under the Landis Award. All labor unions that have failed to conform to this agreement are now on an open shop basis and men are being imported from surrounding cities to take the place of union men who refuse to work.

The Citizens' Committee is determined to fight to the last to break the vicious practices which labor leaders in Chicago have built up and under which the contractors, material men and the public have all been suffering for years. Almost unlimited money is available and at present from $50,000 to $60,000 is being spent every week, the great bulk of which expense is the paying of railroad fare of imported workmen. Almost unlimited funds are available and will be spent if necessary to clean up the Chicago situation.

Louisville Situation Is Quiet

The general situation in Louisville is showing no material change, prices being steady, with demand showing some improvement, but slow gain at that, due to heavy rains and mean weather. The Ohio River is on a rampage, and many towns in the valley are having flood troubles. Weather conditions have been against construction and building of all kinds generally, and demand for material, including common brick, face brick, building tile, drain tile, sewer pipe, and so forth, has not picked up as had been expected. However, a lot of work is in sight, and the local trade anticipates good business shortly. Louisville plants are generally running about half time, a few being on a full time basis.

The labor unions of Louisville, which have held a lot on Market St. for some time, finally let contracts a few days ago for erection of a $300,000 labor temple, which will house most of the local unions. The auditorium will seat 2,000 people.

The Birmingham Situation

There has been but little change in the prices of brick, sewer pipe and clay products of all kinds in the Birmingham, Ala., district, for some time past. The market there continues steady and with very good demand for all clay products.

Plenty of labor for building purposes is to be had, altho there is not an oversupply of first class mechanics in all the building trades at this time.

It is expected that the city will let the contract within a short time now for a city market house, costing about $300,000. The building will be of brick and will be modern in every detail.

Contractors say a large hotel will be built on Fifth Avenue soon, but the contract has not yet been given. A number of residences, both of brick and wood, are being erected in various sections of the city, as are also several small brick store buildings. On the whole a good many Birmingham made brick are now being used in the construction of these various buildings.

San Francisco and Los Angeles

Among the noteworthy building operations that indicate the activities along this line in San Francisco, are the letting of

When You Decide To Install

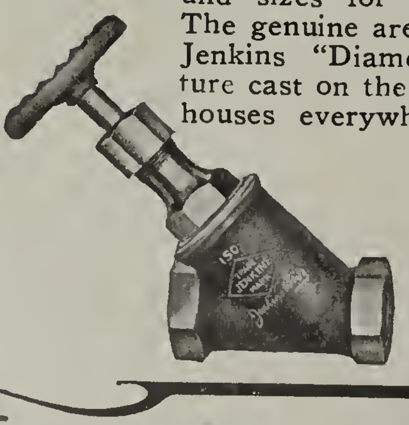
a hand poked or mechanical producer or a rotary dryer or calciner, let our Engineering Department aid you.

We have had thirty years' working experience in this business, and we are confident that we can satisfy you to the limit, regardless of your particular requirements.

We are also manufacturers of stacks, tanks and other steel plate work.

May we have the pleasure of of hearing from you? Drop us a line today.

DUFF PATENTS COMPANY
INC.
Frick Building Pittsburgh, Pa.



REG. U.S. PAT. OFF. TRADE JENKINS MARK Jenkins Bros

Jenkins Brass Y Valve

Particularly adapted for boiler blow-off service, and for handling thick fluids. The opening is nearly in line with the pipe, so that very little resistance is offered to the flow. Regularly furnished with Jenkins Composition Disc and renewable seat ring. Made in standard and extra heavy patterns.

Fig. 124. Jenkins Standard Brass Y or Blow-Off Valve, screwed

Jenkins Valves are made in types and sizes for all requirements. The genuine are identified by the Jenkins "Diamond" and signature cast on the body. At supply houses everywhere.

JENKINS BROS.
New York Chicago
Boston Montreal
Philadelphia London

Jenkins Valves
SINCE 1864

bids for the new gymnasium and swimming pool, by the Berkeley School Board: San Bernardino will have a four story hotel at a cost of $150,000. Mr. Strauss, of Santa Barbara, is figuring on a new commercial hotel, and the rebuilding of the Ambassador, the fine tourist hotel of that city; Venice will have a new five-story apartment house; plans for a new convent and school are being prepared for the Carmelite Sisters, at Alhambra, by Architect John C. Austin. The structure will be erected at a cost of $200,000; from Long Beach is announced the erection of a new bank; the Anaheim Concordia Society is preparing to erect a $20,000 club house.

Los Angeles has a number of important structures just beginning. Among others is the 13-story building of the Sun Realty Co.; a new theatre building for the Forum Theatre Co. of 2,000 capacity; the Lane Mortgage Building for $331,755, at the corner of Spring and Eighth Sts.; a new Masonic hall in the Wilshire District; a new apartment house by C. H. Fawcett, in Hollywood, for $50,000.

Machinery and Equipment

Devices and Methods, New and Old Concerning Which Information of Interest to the Clay Manufacturer is Published

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THE NEW WAY OF SCREENING CLAY

The following letter written by C. E. Jewett, president of the Hocking Valley Fire Clay Co., Nelsonville, Ohio is a description of the Hum-Mer screen installation at his plant and gives a good idea of the operation of this type of equipment.

"We are manufacturers of the Athena vitrified brick, which is impervious to moisture. This brick has a salt glazed surface, and is very widely used for interior work. We operate 18 kilns and have our own clay mine, from which the clay is hauled to us in lumps having a maximum weight of about 50 lbs. This clay is very hard and has to be ground before being used. It is classed as No. 5 tunnel fire clay. We made brick with piano wire screens for 13 years.

"Lately our clay has been getting harder, which has had a very serious effect on the finished product. Up to six months ago we were screening the clay with ordinary piano wire screens that were tapped mechanically. We soon found that we were losing a great deal of money in dry scrap, and in rejections of the finished brick on account of cracks. In fact, our product finally got so poor that we realized we should have to improve our screening method or go out of business.

"After some investigation we installed one six foot Hum-Mer screen manufactured by the W. S. Tyler Co. We arranged to feed this screen with a bucket elevator and a screw conveyor, the latter making the actual distribution of the clay over the screen. The screen is set at an angle of 35 degrees, and is vibrated by current furnished by a 1-KW generator. This system was put in operation in May 1921.

Handles 125 Tons Daily

"Our normal output is about 45,000 standard brick per day, each weighing six pounds. So the Hum-Mer screen is handling about 125 tons of clay per day, and averaging nine hours operation. About 25 per cent. of the material passed over the screen consists of tailings which are sent back to the dry pan to be crushed finer. The screened material can be discharged either into carts in the yard or into our two storage bins, which

Anness

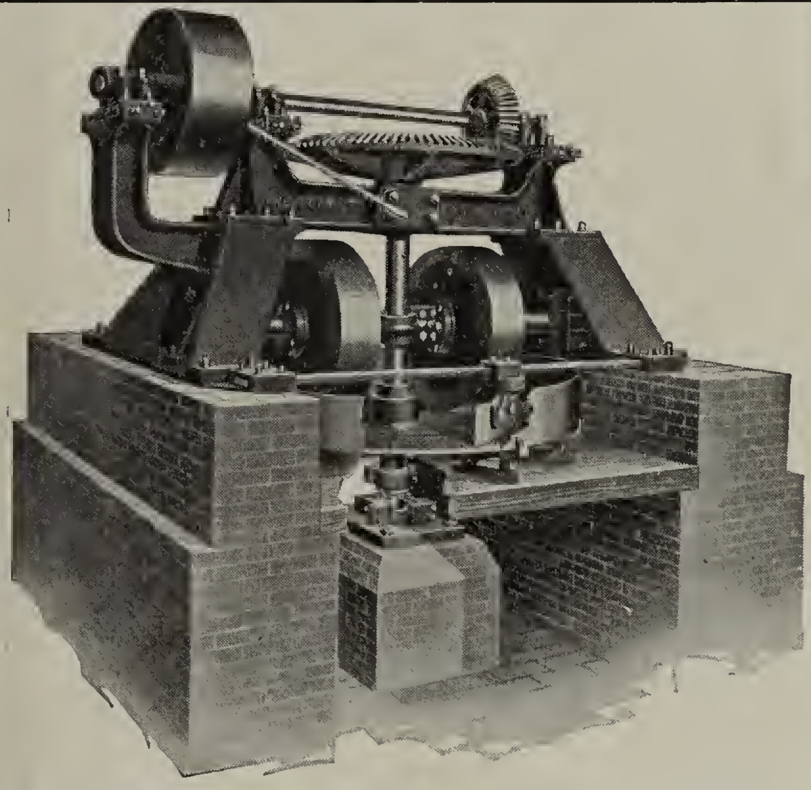
FIRE CLAYS

have all the necessary requirements of a successful refractory.

They are practically infusible—they have an exceedingly hot melting point—they resist all mechanical corrosion—they withstand sudden changes without cracking — they have low heat conductivity.

Let us quote you prices
Write today

The ANNESS & POTTER FIRE CLAY COMPANY
Woodbridge, New Jersey



10 ft. Standard or Type "B" Dry Pan

RUGGED CONSTRUCTION

and scientific design are characteristic with the standard type "B" dry pan.

Every engineering principle for the promotion of economy and serviceability has been incorporated in this machine.

Ask us about it, and other Toronto equipment

The Toronto Foundry & Machine Company
Toronto, Ohio

"Minster" Industrial Locomotives

For Service and Lasting Economy

New Model "F"—Six Ton

A "Minster" will give you the same dependable Service that the fourteen have been giving Twohy Brothers Co., on their 315 miles paving contract.

There are many special features incorporated in our new Model "F."

Why hesitate—Write for Catalog

Cut the Cost with a "MINSTER"

THE INDUSTRIAL EQUIPMENT CO.

510-516 Ohio Street MINSTER, OHIO

Eastern & Export Department

THE HERBERT CRAPSTER CO., INC.

1 Madison Avenue, NEW YORK CITY

NEW YORK BELTING & PACKING CO.

FOUNDED 1846

INCORPORATED 1856

RUBBER GOODS

for the Clay Industry

Test Special Rubber Belting
Indestructible Conveyor Belting
Elevator Belting
Firo Superheat Sheet Packing
Indestructible Sheet Packing
Cobbs Piston Packing
Steam Hose
Water Hose
Pump Valves

New York Boston Chicago
Philadelphia Pittsburgh
St. Louis Salt Lake City
San Francisco

have a capacity of 400 tons each. There is no loss of fire clay, because the tailings are always reground and screened again.

"There are few clays which require so fine a mesh as our clay needs—a No. 740 Ton-Cap screen (10 mesh). The Hum-Mer screens the clay so thoroly that the tailings are as clean as wheat, and the screened clay has almost the consistency of meal. This better raw material has greatly improved the quality of our product. The new brick have a velvety finish that gives them a better appearance and greater durability, and makes them easier to sell.

"The finer texture of the clay also gives better bonding qualities, and makes the brick more plastic in the wet state. This has two important results: it causes a much better bond in the green brick, and greatly reduces the amount of scrap, and it practically eliminates cracks in the finished brick. During last year the large cracks in the finished brick caused a high percentage of rejections, and made it practically impossible to sell the brick at all.

Reduces Scraps 67 Per Cent.

"The Hum-Mer screen has reduced our dry scrap from 15 brick per car down to five brick per car. This means a saving of 1,000 brick a day, which amounts to $35 a day, or $8,750 for the 250-day year. In addition we are obtaining a product which is much more readily marketable, and saving $5,000 a year on decreased rejections of the finished product. In fact, at present our rejections of finished brick are practically negligible.

"With the Hum-Mer screen accomplishing such wonderful results, we could afford to pay a great deal more for operating it than we did for our old piano wire screens. This is not necessary, however, as the cost of operation is very low. The entire installation cost only about $1,400 and is easily good for ten years.

"It is difficult to estimate repairs and maintenance, because so far the screens show no signs of wear at all, and it is evident that they will be good for at least a year. As they cost only about $15 apiece, we feel that $300 a year is ample to cover repairs and maintenance on the screens and the generating set. The cost for power is only $110 a year. The man who handles our conveying system attends to the screen also. The total annual operating cost for the Hum-Mer machine amounts to $868.10 a year.

No More Labor Required

"Our old piano wire screen cost about $300, and we figured its life at ten years. Repairs and maintenance consisted chiefly of wire, the total renewals required per year being equivalent to three new sets of wires. The labor amounted to four men for two days working the equivalent of three times a year. The power required was very small, for it was driven by a 1½-inch belt. The labor required for operation was the same as for the Hum-Mer screen, making the total annual operating cost $432.25.

"The excess cost of the Hum-mer operation is therefore only $435.85 a year, whereas the gross annual saving in dry scrap and rejections amounts to $13,750 a year. This makes the net annual saving due to the Hum-Mer screen $13,314.15, which is a return of 951 per cent. on the original investment.

"The Hum-Mer screen gives us practically no trouble with clogging of the meshes. If it does clog, all we have to do is brush it off with a stiff brush, which takes only a minute. Our clay is relatively dry, however, containing only a small amount of moisture, and this brushing is necessary only once in a great while.

"With the Hum-Mer screen the character of the separation is entirely different from what it was with the piano wire screens. The piano wire screens were tapped approximately 30 times a minute, whereas the Hum-Mer screen is vibrated electrically at the rate of 15 cycles per second. With the

Hum-Mer the larger particles are bounced high off the screen, giving the finer particles an opportunity to pass thru the mesh. With the old piano wire screens, however, a great many coarse particles were necessarily forced thru the wire, making our brick of poorer quality.

No Trouble With Broken Wires

"Incidentally, the finer texture of the brick is saving us something in connection with the operation of our rotating cutoff machine. This machine cuts off 22 brick at one stroke, the cutting being done by wires. The coarse material formerly present in the brick caused a broken wire practically every time we took a cut. Since this took half a minute to replace, and cost several cents, the loss of time and money was considerable, altho it would be difficult to figure exactly.

"As far as capacity is concerned, it is not exactly fair to compare the Hum-Mer screen with the piano wire screens, because the Hum-Mer is screening the clay more finely. If the piano wire screen has been arranged to furnish as fine a product as the Hum-Mer screen, we estimate that we should be able to screen 25 per cent. more with the Hum-Mer than we could with the former screen. This is more or less guess work, however, as we have never pushed the Hum-Mer screen to capacity. We have been handling about 150 tons of clay in nine hours.

"Other brick manufacturers have been here to inspect our system, and have been unanimous in calling it the best they have ever seen. We are certainly delighted with the Hum-Mer electric screen, and can't recommend it too highly to other concerns in our line of business."

Cost of Operating the Hum-Mer Screen

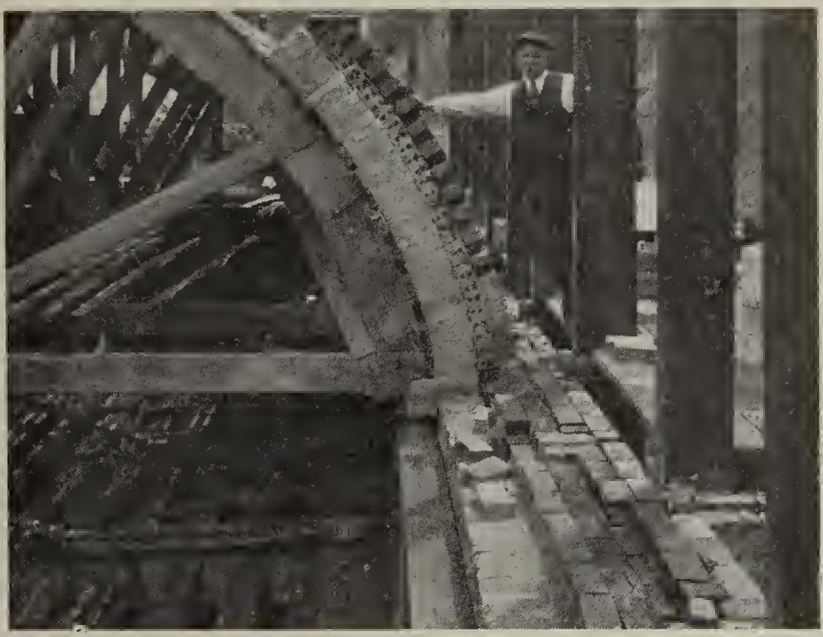
Depreciation $\frac{\$1,400.00}{10\text{ yrs.}}$	\$140.00
Average yearly interest @ 7% $\frac{11}{10}\times\frac{\$1,400\times.07}{2}$	53.90
Repairs and maintenance	300.00
Taxes and insurance @ 3%	42.00
Power	110.00
Labor, 2 hrs. per day×250 days=500 hrs×\$.4444	222.20
Total annual operating cost, Hum-Mer screen	\$868.10
Tons screened annually $\frac{45,000\text{ brick}\times6\text{ lbs.}\times250\text{ days}}{2,000\text{ lbs.}}$	33,750
Cost per ton $=\frac{\$868.10}{33,750\text{ tons}}$	.0257
Cost per thousand brick $=\frac{\$868.10}{45,000\times250}$	.0772

Cost of Operating Piano Wire Screens

Depreciation $\frac{\$300.00}{10\text{ yrs.}}$		\$ 30.00
Average yearly interest at 7% $\frac{11}{10}\times\frac{\$300\times.07}{2}$		11.55
Repairs and maintenance:		
Material, 3 sets of wire @ \$15	\$45.00	
Labor equivalent to 4 men×2 days×\$4×3 times	96.00	141.00
Power		27.50
Labor, 2 hrs. per day×250 days=500 hrs.×\$.4444		222.20
Total annual operating cost, piano wire screens		\$432.25
Cost per ton $=\frac{\$432.25}{33,750\text{ tons}}$		.0128
Cost per thousand brick $=\frac{\$432.25}{11,250\text{ M}}$		.0384

Savings due to Hum-Mer Screen

Reduction in dry scrap, \$35 per day×250 days	\$ 8,750.00
Savings in rejections of finished product	5,000.00
Gross annual saving	\$13,750.00
Deduct difference in operating cost	435.85
Net annual saving due to Hum-Mer screens	\$13,314.15
Saving per ton $=\frac{\$13,314.15}{33,750\text{ tons}}$	.3945
Saving per thousand brick $=\frac{\$13,314.15}{11,250\text{ M}}$	1.1835
Annual return on investment	951%



Insulating a rectangular kiln with Nonpareil Brick which are seen in the walls and arch just back of the hollow brick. Queen City Shale Brick Company, Cincinnati, Ohio

Why Kilns Need Insulation

BRICK and pottery kilns need insulation because they need that extra 10% to 15% efficiency which insulation makes possible. Uninsulated kilns lose as high as 25% of their total heat by conduction and radiation. Consider what that means in fuel alone.

Adequate insulation—insulation with Nonpareil Brick—will save about two-thirds of that loss. By keeping heat inside the kiln, that is, using heat that would otherwise be wasted, Nonpareil Insulating Brick materially reduce the amount of fuel required. They lessen the time needed to reach working heat, maintain more constant and uniform temperatures and so cut down the loss in under- and over-burned ware. It has been repeatedly demonstrated that the increased efficiency of kilns insulated with Nonpareil Brick pays well over 100% per year on the insulation investment.

Nonpareil Brick are adaptable to practically any type of brick or pottery kiln; are light in weight, structurally strong, easy to install and reasonable in price.

Are you concerned about your heat losses? Send for the 72-page book, "Nonpareil Insulating Brick." The section on kilns will interest you. The book and a sample brick are sent on request, without charge.

Armstrong Cork & Insulation Company
149 Twenty-fourth Street Pittsburgh, Pa.

Also manufacturers of Nonpareil High Pressure Covering for steam lines, feed water heaters, boilers, etc.; Nonpareil Cork Covering for drinking water systems, brine and ammonia lines and cold pipes and tanks generally; Nonpareil Corkboard Insulation for cold storage rooms; Nonpareil Cork Machinery Isolation for noisy machines, and Linotile and Armstrong's Cork Tile for floors in offices, residences, etc.

Nonpareil Insulating Brick
For Kilns, Boiler Settings, Etc.

FINE CERAMIC MANUFACTURE

(*Continued from page 543*)

necessary to mix it with any other mineral to bring about a white body, and that it also has unusual strength. The loss to the potteries has been reduced from 17 or 18 per cent. to six per cent. by the use of the Missouri clay, Mr. Doane states.

* * *

CINCINNATI EXHIBITION OPENS MAY 27

An exhibit of artistic pottery, architectural designs, ceramics, mural decorations and sculpture will open at the Cincinnati (Ohio) Art Museum, May 27, and will continue thru the summer. The exhibition is to be devoted to original work by American artists not heretofore shown in Cincinnati. Entries must be made by May 1. A jury consisting of H. H. Wessel, C. J. Barnhorn, George Debereiner, John Rettig, J. D. Wareham, Miss Dixie Selden, Miss Lorinda Epply and John C. Kreis will pass on the awards.

* * *

PITTSBURGH-AMERICAN MAKING TILE

Tile is now being manufactured in the plant of the Pittsburgh-American China Co., at Greensburg, Pa. The company is employing about 165 workers and has an output of probably 5,000 feet or 40,000 pieces of tiling daily. This plant was built by J. B. Owen of Zanesville and his associates several years ago, the original intent being to manufacture hotel china. Later, however, it was decided to devote a portion of the plant to the manufacturing of tile, and this is the first department to be placed in operation. The plant is under the general management of Malcolm A. Schweiker, while the production end is in charge of A. P. Braid.

Benjamin W. Kerr, treasurer of the corporation, is also general manager of the Railway Industrial Engineering Co., who devotes much time to the affairs of the Greensburg plant.

* * *

TELL EMPLOYES WASTE MUST BE REDUCED

A. M. Maddock, one of the heads of the Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary ware, has issued a notice to employes recently of pertinent and timely importance, dealing with the necessity for the conservation of materials and equipment used at the pottery. It sets forth that "Everyone must realize that during this period of keen competition every possible saving must be effected. An order has been issued to all foremen insisting upon the reduction in the number of supplies which ordinarily have been used in their departments. There has been entirely too much carelessness which resulted in waste; there has been entirely too frequent breakage of electric bulbs, window panes, carelessness with the use of tools of all kinds, and these have increased the purchase of materials enormously, and it must be reduced."

* * *

TRENTON PLANTS ARE BUSY

Practically every pottery at Trenton, N. J., is operating at or near capacity at the present time, and the sanitary ware plants are particularly busy. A large addition has been made in local working forces in this branch of the industry as well as in the general ware potteries. The latter plants, and primarily those producing hotel ware, have a large volume of orders ahead; some of these plants are sold up thru the year. The electrical porcelain potteries also are busy.

* * *

CINCINNATI POTTERY INCORPORATES

The Cincinnati-Norwood Pottery Co., Cincinnati, has just secured a charter from the secretary of state, incorporating the concern. The capital is given as $35,000. The incorporators are: William J. Mahoney, Anna Mahoney, George H. Haldy, Lillian A. Smith and Martha A. Juehling. The plans of the new company, according to Mr. Haldy, one of the incorporators, is to erect a modern plant some time this spring and begin the production of garden pottery and art tile.

* * *

NEW INDIANA PLANT TO EMPLOY 500

The Chesterton China Co., Valparaiso, Ind., has two kilns ready for firing at its new local plant, and will inaugurate operations in the different departments at an early date. For several weeks past the sagger department at the plant has been operating, laying in a stock of saggers for the heavy chinaware production planned by the company. Three other kilns are now in course of construction and will be ready for service in the near future. It is expected to develop full capacity at the pottery during the summer, giving employment at that time to close to 500 operatives. Thruout the spring season, machinery will be placed in position and arrangements perfected for full production. The company will manufacture high-grade ware, and the average yearly output, under full capacity, will have an estimated valuation of $2,000,000.

* * *

PLANS TO EXPAND ACTIVITIES

The Pacific Porcelainware Co. reports that in its line the trade is very active and promising, so much so that the company has found it necessary, in all three of its plants at Richmond, Cal., to provide for more working space and an addition of equipment.

* * *

ORGANIZE MANTEL TILE COMPANY

Stearns & Holmes, Inc., Syracuse, N. Y., has been organized with a capital of $40,000, to manufacture tiles for mantels and other purposes. The company is headed by G. D. Stearns, W. S. and C. H. Holmes. J. G. Smith, First National Bank Building, Syracuse, represents the company.

* * *

TO BUILD NEW SLIP HOUSE

The Star Porcelain Co., Trenton, N. J., has awarded a building contract to the Karno-Smith Co., Trenton, for the erection of a new addition to its plant, 71x101 feet, estimated to cost about $10,000. It will be used as a slip house and for other operating service.

* * *

INCORPORATES TERRA COTTA COMPANY

The Monument Mound Co., Inc., New York City, has been organized for the manufacture of monuments, terra cotta and other products. Capital is listed as $100,000. W. D. Bosler, 511 West 81st Street, New York, is the incorporator.

* * *

WILL ERECT NEW BUILDING

The Porcelain Enamel & Mfg. Co., Baltimore, Md., has filed plans for the erection of a one-story building at its plant on O'Donnell Street.

* * *

HOLLAND MANLEY, AGED POTTER, DIES

Holland Manley, 92, oldest of the pioneer potters in the East Liverpool district is dead at his home in East Liverpool. The deceased was one of the most active in the pottery industry since 1850 when he came to East Liverpool from Pittsburgh. In 1864 he associated himself with William Cartwright in the manufacture of yellow ware, retiring in 1880.

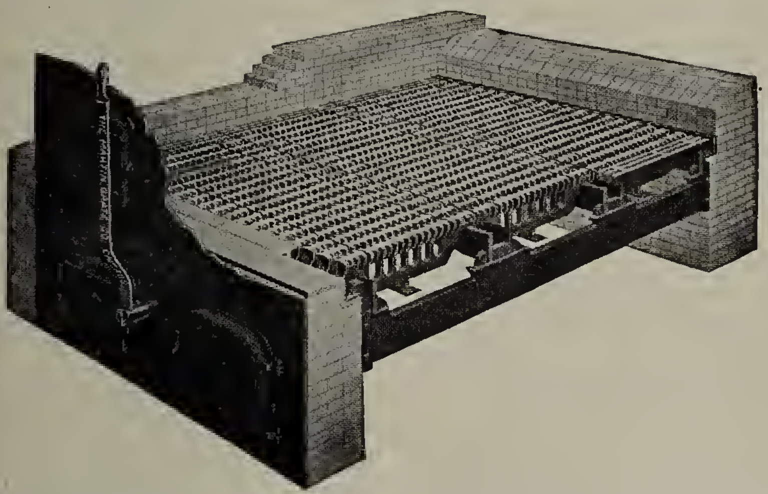
Among Our Advertisers

Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

REDUCING PRODUCTION COSTS

Maintaining profits on a falling market does not require genius, but it does call for close figuring, and there is only one way it can be accomplished, and that is by reducing production costs. Among the available economies, and most important one, is that of coal used under the boilers for generating steam. To economize on fuel you must be able to use the cheap fuels, local or otherwise, to purchase any coals that may be most available in your market, and also avoid the large losses from incomplete combustion, too frequent cleaning of the fires, and an ash-pile full of good fuel.

Where the old style stationary grate-bars are used, all these losses occur, and yet many of our readers balk at the initial expense of the installation of modern and economical rocking grates, altho as a matter of fact this expense is often made up several times over each season by the saving in fuel effected.



The Martin Rocking Grate illustrated is in use in many of the best clay plants and the number of repeat orders received by the makers indicates that the claims made for this device are fulfilled.

This grate has been manufactured continuously by the same company for over 20 years and is in successful use all over the country, under all types of boilers, large and small. It is easily installed in the furnace, without change in the brickwork, and is the only shaking-grate which can be adjusted for all of the different grades of coal, for varying loads and drafts, without the purchase of new parts.

Those of our readers who are interested in fuel economy, durability, and better boiler efficiency may address the manufacturers, the Martin Grate Co., 347 South Dearborn Street, Chicago, Ill.

⁂

GASOLINE POWERED LIFT TRUCK IS ANNOUNCED FOR INDUSTRIAL FIELD

A gasoline powered elevating platform truck embodying many unique construction features to be known as the Clark Truklift has been put in production by the Clark Tructractor Company, Buchanan, Michigan, manufacturers of gasoline driven industrial trucks and tractors.

The Clark Truklift conforms in appearance and uses to the electric elevating lift trucks which have been used in industrial plants for many years, but low initial cost, ease of maintenance, flexibility, and continuous twenty-four hour service are distinguishing characteristics claimed for it by the builders, who are the pioneers in the manufacture of gasoline industrial trucks.

The loading platform is 26 inches wide by 54 inches long and will elevate its load of 4,000 pounds from a minimum of 11 inches to a maximum of 16 inches from the floor in eight seconds; automatic stops provide for both up and down limits; elevation can be stopped by hand control lever at any point.

The lifting mechanism is operated by hydraulic pressure. Power for locomotion and elevating the load is derived from a

Mr. Clay and Brick Manufacturer

Read every word of the following letter received from the McFeely Brick Company, Bolivar, Pennsylvania:

"And note that you would appreciate our giving you the reasons why Gravity Conveyors are a good thing in a brick plant, or, perhaps I should say the reasons why I believe them to be such."

Reason No. 1

"I can handle brick or other clay products for less money. I believe I am safe in saying that one can save from 25 to 50%, governed by the class of product and conditions.

Reason No. 2

"I can handle products such as face brick, etc., that will not stand rough handling, at a decided saving or reduction in breakage that is frequently due to the turning over of barrows and trucks, and the breakage that occurs from wheeling over rough paving, etc.

Reason No. 3

"I can get results, both quality and quantity, with a much less efficient class of labor than is required by the old method. Can use the green emigrant, old men, boys, and even women and girls, if necessary, when labor conditions are such that it is next to impossible to get the better class of labor. And even if you could get them, the wages they demand are prohibitive.

Reason No. 4

"I can handle decidedly more products in a given time, thereby emptying kilns in less time, the quicker turnover greatly increasing the capacity of the plant."

"Write for descriptive catalog"

Standard Conveyor Company

NORTH ST. PAUL, MINN.

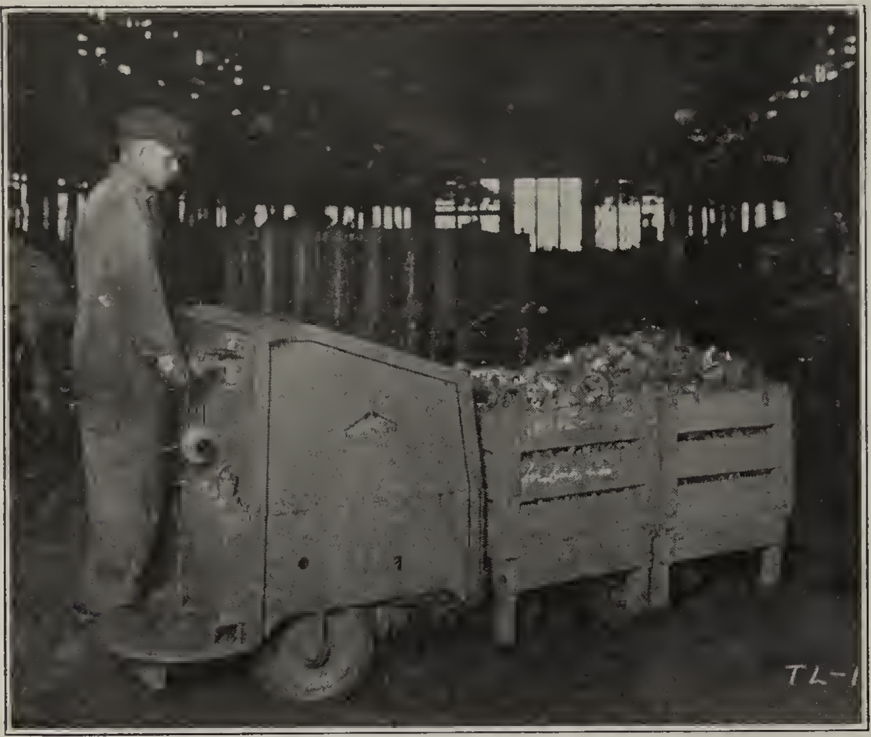
New York 227 Fulton St.
Chicago 549 W. Wash. St.
Cleveland 225 Electric Bldg.

Representatives in all principal cities.

15 horsepower 4-cylinder tractor engine with a 3⅛ inch bore and 4½ inch stroke. The engine is mounted at the rear in a closed compartment containing transmission, governor, vacuum tank, radiator, et cetra.

A three point suspension is used, the steering wheel forks being supported in a steel casting, which is pivoted at the center of the frame on a chrome nickel steel pin 2 inches in diameter. The drive is through a Clark bevel gear axle equipped with ball and roller bearings located under the loading platform. Driving wheels are cast steel with pressed on rubber tires 10½ inches by 5 inches. Steering wheels are cast steel disc type with pressed on rubber tires 16 inches by 3½ inches.

Standard automotive construction has been adhered to wherever possible, so that the Truklift can be serviced by any good automobile or truck mechanic. The manufacturers claim as a very desirable feature the provisions that have been made for accessibility—a hinged hood renders the engine available for inspection instantly, and if necessary the machine can be stripped down to the chassis in less than twenty minutes.



Clark Truklift

The driving and elevating controls are mounted on the rear of the engine compartment and are operated by the driver, who drives standing. The brake lever pedal is under the driver's foot and so arranged that the Truklift stops automatically if for any reason the operator steps off while the machine is running.

The Truklift is the outgrowth of two years of development and testing work and is intended to meet the needs of those who require a full powered machine to work eight hours or more a day continuously in the transporting of materials in departmental or interplant haulage. It will climb a 10 per cent. grade with a 4,000 pound load and has two speeds in each direction.

The total weight of the Truklift ready to go to work is 2,500 pounds; over all lengths of machine is 107 inches; width, 35½ inches, and height 51 inches.

* * *

WHAT CONVEYOR BELTING CAN DO

By D. V. Wall

The manufacture of Conveyor Belting has in recent years been developed along more scientific lines.

Now instead of simply turning out a belt of a certain width and number of plies of rubber impregnated cotton duck, the exact needs of each installation are considered.

The load carried, the speed it is to be moved, the height to which it is elevated in the course of its journey, the character of the material conveyed—all these factors enter into the determination of the weight of fabric to be used, and the number of plies required. Obviously, a belt can not be made up of too many plies or it will be so stiff it will not conform to the curve of the conveyor idler pulleys. From the other standpoint sufficient plies must be used to prevent undue stretch and the resultant shut-down while a piece is cut out and the belt relaced or fastened. Shut-downs cost money.

If the material to be conveyed is very abrasive, the conveying cover must be built heavier, and of a much tougher compound.

Goodyear Stacker Conveyor Belt is an example of conveyor belt built to meet special conditions. One placed in service by the Derry Ranch Gold Dredging Company of Leadville, Colorado, lasted two years and two months before it wore out.

This belt handled 1,126,685 cubic yards of material under the most severe operating conditions imaginable. It operated in fifteen feet of frozen ground for four months each season, and during that time the stacker idlers would freeze and bind, it being impossible to keep them running. In the opinion of the General Manager of the Company this wear and tear on the belt during the period of extreme cold was easily fifty per cent. greater than when the belt received normal use.

The Goodyear Technical Man often has to supply all-round expert knowledge. He must assume responsibility as broad as the opportunity.

In 1918, the original factory of the Morey Clay Products Company of Ottumwa, Iowa, was completely destroyed by fire.

The G T M was called in to make recommendations for belting all the drives in the new plant. Upon the accuracy of his analysis depended the efficient relation of all the drive and conveyor processes. This affected directly the economy and profit of the company's production method.

Many kinds of belting had been used by the company in its first plant, so the officials were able to give the G T M much co-operation in the form of data on operating conditions from their earlier experience.

Eleven Goodyear belts were installed on the recommendations made by the G T M after his careful survey of the plant requirements. They are of different types, to perform different functions. A 16-inch 5-ply and a 16-inch 4-ply Wyoga Conveyor for carrying materials and products, Goodyear Klingtites on the smaller and slower drives, Goodyear Blue Streaks on the intermediates, and a big, strong 26 inch 6-ply Goodyear Blue Streak running like a top on the main drive from the engine to the line shaft.

Their performance is characterized by the superintendent as "excellent service." They are powerful. They require less attention. They give less trouble. And they have to their credit records for longer life than the company received from its best previous belting.

The foregoing examples will but illustrate the modern and proved method of manufacturing and applying a conveying belt. It is best to consult a Goodyear Technical Man, to make sure before ordering, that all the operating conditions have been given the necessary attention. Then you can be sure that the conveyor belt will carry a satisfactory tonnage at the "lowest ultimate cost."

* * *

BRICKMAKING

Catalog Number 24 has been issued by Chambers Brothers Co., Philadelphia, Pa., under the above title. It contains illustrations of all kinds of brickmaking equipment, and for purposes of comparison shows a picture of a ring pit tempering wheel formerly used for grinding and tempering clay for hand molding brick. This is a process familiar to brickmakers in days gone by.

The Chambers complete and extensive line is described, it being a simple matter to locate the particular equipment desired, inasmuch as the catalog is indexed intelligently.

Auger machines, cutting tables, granulators, clay feeders, grinding machines, pug mills, disintegrators, clay conveyors, cars, barrows, etc., are included in the well-known Chambers line. Space is also devoted to their drying and burning equipment. A copy of the catalog will be sent on request.

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BRICK and CLAY RECORD

Established 1892. Now in its twenty-ninth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by

Industrial Publications, Inc.

Telephone: Harrison 9462

407 S. Dearborn St. Chicago

Branch Offices
New York Cleveland Kansas City

Address all communications to home office

Chicago, April 18, 1922
Vol. 60 No. 8

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

The Price Cutter

WE HAVE just passed thru 12 months of small general demand for clay products. It is a credit to the industry that despite the bad conditions that existed, the demoralization due to cut-throat competition was held to a minimum. However, even the small amount of price cutting that did take place is a boil on the neck of the industry.

No business in the world can get anywhere or long maintain an existence by competition based upon cut-throat prices that abolish fair profits, lower the standards of service, and not only kill all confidence in the business in the eyes of the public, but rob the manufacturer of his own self-respect and provoke lasting bitterness and mutually destructive hatred.

Reports have been passed around the industry such as those following. A hollow tile manufacturer in Iowa is said to have given contractors in the Twin Cities order blanks and permission to fill out these blanks at their own prices. A face brick manufacturer in Ohio is said to have let some of his large dealers name their own prices. A common brick manufacturer in Mississippi is taking his profits out of his real estate and other holdings and putting them into the brick business and selling his brick at a loss, thereby threatening the life of other concerns. In Georgia brick have been sold below actual production cost. A face brick manufacturer in the Middle West is quoting special face brick prices to architects. This practice used to prevail many years ago, but was stamped out and has now reappeared.

Fair profits are as vital and sacred a right in business as the ballot in politics or free speech in society.

The man, whoever he is, that attacks or imperils this right is not merely a cheater and a trouble-maker in the game of life, but a thief and a bully among his fellows, an assassin of American business integrity and an industrial traitor to his country.

The only way to handle him is to ostracize him by organized opinion, and establish the right of the square-dealing American business man to a just return upon his investment.

The very future of American business depends upon the wholesome development of honesty and respect for others and the most effective industrial organization.

There is consolation for the industry in that the nation's business condition is improving—more especially the building industry. There are many who feel that a condition similar to that which occurred in 1919 may happen.

It will be remembered that in the spring of 1919 a few cement factories supplying material in the New York market cut prices and loaded their plants to capacity. Later in the spring the demand picked up and prices stiffened, and those who had not filled up on cut prices got the benefit of a big demand at new prices and better profits.

There is a possibility that the building industry will pick up so that every plant will have to operate at full capacity within a few weeks. Those plants that are getting business now by cut-throat methods will be the ones to suffer. There is a law in nature which states that for every action there is a reaction equal in magnitude and opposite in direction. It appears that the price cutter is soon due to get his just deserts by being stocked up with orders netting him no profit.

* * *

Quick Turnover in Falling Market

YOU OFTEN HEAR references made to "those old days when prices were way down." However, of those who make such references very few appreciate that those days of extremely low prices were preceded by very high prices, and that that period of high prices was in turn preceded by a period of low prices, and so on; periods of high and low prices have alternated for a century. It is peculiar that a study of the last 110 years shows two periods of 30 years each of falling prices and two periods of 20 years each of rising prices. Of course, during these periods movements in either direction were irregular.

All indications make us believe in all probability we have now entered upon a period of irregularly declining price levels for at least the span of ten years from the time that those prices turned. Not that they will in any event go down without some upward changes, for all of these movements in either direction are irregular, but there is every reason to believe that in general our price trend during that period will be down.

The change from a period of rising prices to one of falling prices which present manufacturers have seen should usher in a change in business policies. In a period of rising prices, such as we have been thru in recent years, you purchase your coal, your clay (many think that they do not pay for their clay because they have a deposit in their holdings, but this clay does cost money), you make it up into your finished product, and while you are making it the very material of which it is constructed increased in value and your finished article can be sold not merely for the profit that you thought it would bring, but for that and something more. In the long run the man who was dealing in futures was steadily making money.

But in a period of falling markets, the manufacturer buys his coal and raw material, makes it into his finished product, and by the time he has it made up the coal and clay and value of the product have shrunk in value, and he makes not the profit that he thought he would, but something less.

It is true of almost every one of us that we have had our active business lives in a 20 or 25 year period of rising prices. The change in market conditions necessarily requires a complete change in policy if we are to operate our plant economically. It can be readily understood from the above that the man who can manufacture his ware in five days has a distinct advantage over the man who requires 25 days to load the product on the car from the day the raw material is first taken out of the bank. It should be readily apparent to every manufacturer that one of the ways of cutting production costs is speeding up production by the adoption of methods which require less time for digging, transporting, molding, drying, setting, burning and loading clay ware.

* * *

Industries Position Warrants Intensive Merchandising

THERE ARE CLAY PLANTS today, in the same district, manufacturing the same product of similar quality, some of them operating from only one-third to one-half capacity, while others are operating at full capacity.

What is the reason for this great gap

between these manufacturers? Just this. The one group has no merchandisers. The other is composed of real merchandisers. In one group manufacturers are lax in their merchandising methods. The others are alert in their merchandising drive. The one group hesitates—fears—waits—"alibis," while the other acts—has faith—is optimistic and unafraid—knowing that business is here for those who seek it. And no doubt the first group is served by distributors and dealers with the same disease, because it is no more than natural that the spirit of the manufacturer and his attitude toward business should permeate his distributor associates. The other, no doubt, has distributors and dealers full of confidence—active—creative business getters—a wide-awake sales force on their toes and happy—in fact they have no "alibis" nor any need for them.

This year—1922—is one of selling. It is a competitive year, so it behooves every manufacturer to arrange his program with this end in view. You must lay stress on selling. A new kink must be put in your product, your way of presenting it or your sales methods, that will attract attention. A new way of selling your ware may in itself change depression into prosperity for you.

Aggressive companies will be the ones to make progress. Figure out ways and means of reaching your market in a creative way. For instance, (a) consider methods to pursue with the consumer; (b) consider methods to pursue with the building supply dealer; (c) consider methods to pursue with the contractor; (d) consider methods to pursue with the architect. This is your chain, and the chain is no stronger than its weakest link.

The one great market in this country today is the building industry market. The records of the first three months of this year are a plain indication of what is going to happen. 1922 is going to outstrip all previous years in building.

Industries whose markets are not as lucrative are showing considerable activity in merchandising lines. Witness the advertising in national magazines of such commodities as automobiles, rubber tires, candies, food products, musical instruments, and jewelry. The clay product industry, with much greater possibilities, should certainly organize itself for an intensive merchandising and advertising campaign.

Tell the public, the building supply dealer, the contractor and the architect of the superior quality of your product, of your large capacity, of your modern plant, which enables you to sell at lowest cost, of your better service, of the beauty of your ware, of its permanency, of its lower cost in the long run compared with substitute building commodities.

After you have paid your assessment to your respective trade association, which uses a great part of it for advertising purposes, do not sit back in your chair and fold your arms with the feeling that you have done your share of advertising effort. This should be but a small beginning of your sales efforts.

⁂

Atmosphere Clearing for Trade Associations

TWO distinct movements have been made recently which are of prime importance to this industry because of the many trade associations existing therein. Senator Edge of New Jersey and Representative McArthur of Oregon have jointly introduced a resolution in Congress, the purpose of which is to end the confusion that exists among trade associations as to what they are permitted to do, and determine the limits of beneficial action—that is, ascertaining where benefit to the members of the association ceases to be a benefit to the public.

The advisability of this step is very clear. It is no longer a matter of uncertainty and indecision, but one of real danger when business men in an effort to cooperate for the mutual benefit of an industry and the American public come together in an honest effort to arrive at some progressive procedure. Something certainly is needed in the way of a definition of trade association activities in order to make way for sound economic progress of American industry.

The other matter of great interest is the recent meeting of representatives of trade associations with Secretary of Commerce Hoover. Mr. Hoover believes that statistical information as to productivity and national stocks is needed not alone by the man in a particular industry, but by men in other industries and by every agency of the Government. A study of the trend of production and consumption does not imply restraint of trade. If it does, then the whole physical basis of commerce that fills a great part of the space of our daily press would need to be abolished. We would then be bankrupt in about ten years, Mr. Hoover states.

Mr. Hoover advocates that trade associations of their own volition make public information on production and stocks, believing that an industry will best succeed if it acts in knowledge rather than in ignorance.

The present administration is making a sincere effort to cooperate with business. If trade associations and business in general do not show a spirit of willingness to grasp the extended hand of the Government, they will be doing so to their own disadvatage. A genuine opportunity has been opened to them to lend their influence in shaping a situation which can be made highly constructive. If the best use is not made of the opportunity, the future usefulness of trade associations will be highly problematical. Not to cooperate now would leave small cause for future grumbling.

⁂

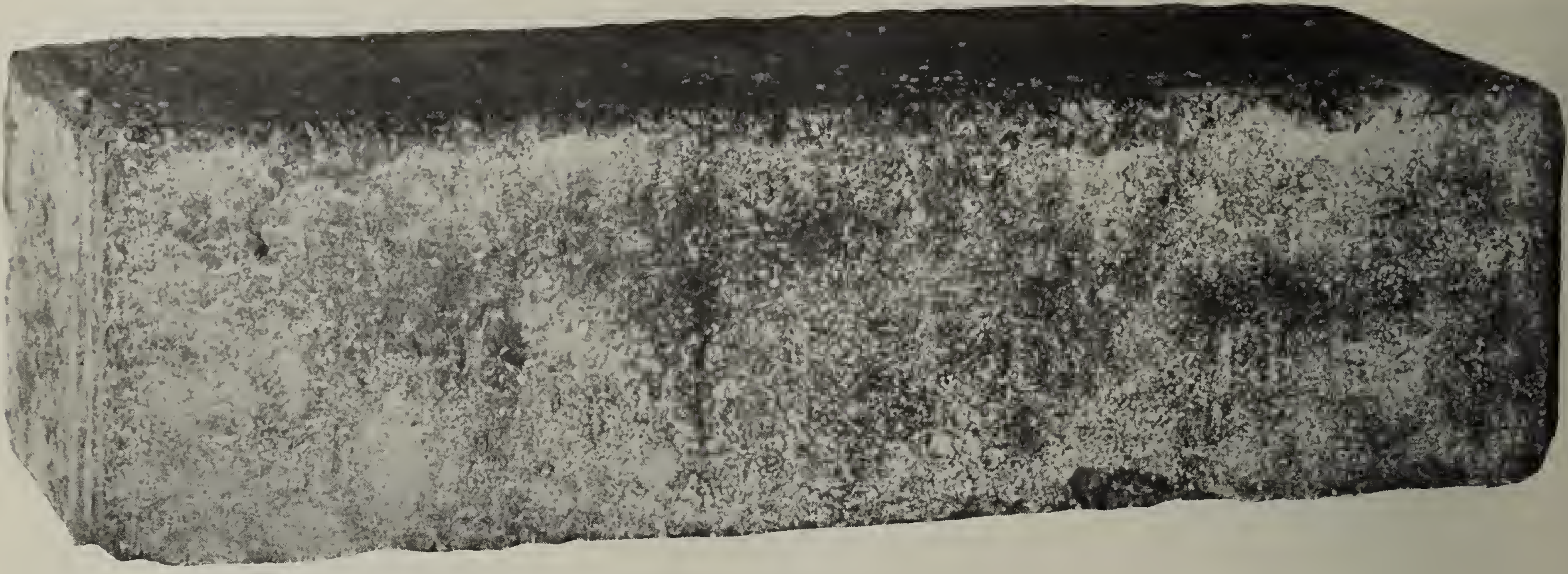
Whitewash, the Clay Manufacturers' Arch Enemy

INTEREST in the cause and prevention of whitewash on clay ware and brick work is again at great height. This enemy is as old as the manufacture of clay ware itself, and thousands of clayworkers and scientists have experimented to find means of eliminating it.

On other pages in this issue is an extensive article on this subject written after a thoro research into a great deal of literature which has been published on this subject, and from practical observation of plants in the industry. The article is one of the most complete that has ever been published on the subject, but we feel that there must be other experiences in the industry which would be beneficial for the entire clayworking trade to know of.

Whitewash on an otherwise beautiful brick building mars its appearance and not only affects unfavorably, the manufacturer who supplied the material, but it gives brick in general a black eye before the eyes of the public. All of the public does not stop to find out what particular brand of brick was used and the tendency is to make the common error in logic of arguing from the particular to the general, and thus stamping all brick as liable to scum and therefore unsightly and unworthy.

It behooves every manufacturer not only to improve the quality of his brick and try to eliminate all whitewash, but also to aid the entire industry by giving it the benefit of any knowledge he may have of ways to eliminate this common foe. Every clay manufacturer who has had any experience whatever with methods of reducing whitewash, is urged to send in his knowledge of the subject.



Scumming, Efflorescence and Whitewash

Ancient Enemies of the Clay Product Manufacturer Again in Limelight —What It Is—How It May Be Caused—Methods of Elimination

SCUMMING, efflorescence and whitewash are again having their inning of attention. There is perhaps no other subject in clay products manufacture, with the possible exception of burning, which disturbs the plant operator so frequently and so much as these old enemies.

There is much confusion in the proper use of the terms scumming, efflorescence and whitewash. Sometimes they are used synonymously, but we doubt that this is correct usage. Efflorescence is a chemical term which refers to the deposit of a flowery residue caused by the evaporation of a solution containing a chemical salt. In the case of clay ware, this residue may be seen on the surface of a piece, and is a result of the evaporation of the water which is brought to the surface by capillary attraction, and which has dissolved in it the soluble salts present in the mass. Efflorescence may occur in the dryer, in the kiln during early stages of burning, or in the finished product when in the stock pile, or in the case of brick when laid in a wall.

WHAT CAUSES WHITEWASH?

The origin of scum or efflorescence, which appears in the dryer, on burned brick, in the stock piles, and on the brick wall, is due to the presence of certain salts in or on the ware by reason of a large number of causes briefly outlined below:

- **Soluble salts in weathered clay.**
- **Minerals in unweathered clay which decompose.**
- **Soluble salts in tempering water.**
- **Sulphur in lubricating oils.**
- **Sulphur in kiln gases used for dryer heating.**
- **Slow drying.**
- **Condensation in dryer.**
- **Decomposition of sulphur minerals in clay during burning.**
- **Sulphur from fuel uniting with lime in clay.**
- **Condensation during water-smoking period.**
- **Storage on cinders or damp soil.**
- **Soaking of brick wall and re-elaboration.**
- **Action of rain and soluble salts from mortar.**

What Scumming Is

Scumming, on the other hand, is due to a chemical action between the sulphur contained in the kiln gases which may have its origin from the fuel used or from the clay itself, and some of the elements of the product, chiefly calcium, thereby forming a white compound. Scumming does not form from the evaporation of the water containing the soluble salts.

Whitewash is a term which is used synonymously with both scumming and efflorescence. Dryer-white, kiln-white and wall-white are also terms used for the same coating on clay ware.

The present renewed interest in finding a solution to the problem of whitewash is due to the tendency at this time to improve the quality of ware, to better serve the public, and because of the greater competition between manufacturers. While efflorescence or scumming may not be injurious to many wares, such as sewer pipe, paving brick, drain tile, and so forth, its appearance does affect the sales of these products.

Some Desire Whitewash

A few cities are exceptional common brick markets in that the brick must be whitewashed to be readily salable. The idea seems to prevail that the whitewashed brick are harder burned, and in consequence more durable than the clean brick. In other words, the builders have learned to grade the hardness of the brick by the appearance of the whitewash.

Practically all clays or shales contain soluble salts. 28 out of 31 different clays studied in New Jersey contained soluble salts ranging from .06 per cent. to 1.44 per cent., the average being 37 per cent. Out of 21 clays analyzed by a German chemist, there were only two that did not contain soluble salts.

Ground water percolating thru clay beds is constantly bringing in and taking out soluble salts.

The soluble salts contained in clay and ground water are usually sodium, potassium, calcium, magnesium, vanadium, and so forth, salts of chlorides, sulphates, carbonates and nitrates. Besides these soluble salts there are insoluble compounds in clay, such as iron pyrite and others, which during the burning operations are changed. The sulphur in iron pyrite is liberated and

Contrast the Above Clear Brick with the One on Opposite Page Which Is Badly Whitewashed. Barium Compounds Will Often Reduce the Tendency to Discolor.

some of it combines with the other elements in the piece to form sulphates of that element.

Small Amount of Salt Will Whitewash

It is these salts that cause whitewash on clay ware. A content of only .1 per cent. of calcium sulphate may give rise to whitewash on the surface of a piece of clay ware.

In some instances it has been found that freshly mined material did not scum, and then, on the other hand, weathered clay has been found less troublesome. Thus, weathering of clays may have both effects. It may reduce scumming or efflorescence by leaching out the soluble salts. Or, it may increase the soluble salts by breaking down the pyrites and other minerals occurring in the clay, transforming them into soluble compounds.

Water used in the tempering of clay usually contains some soluble salts. If it contains sulphates, which are most objectionable, other sources of greater purity should be sought, or the water treated so as to render those salts harmless.

A sewer pipe plant had trouble with its pipe badly scummed, and poorly glazed even with the use of excess barium carbonate. After the source of tempering water was changed, the pipes were completely different in appearance.

How to Test Clay

A simple and easy test can be made of the clays and water used in manufacture and every manufacturer should familiarize himself with it. Obtain from the druggist or from some laboratory a small quantity of barium chloride and dissolve one part in ten parts of distilled water, and keep for tests. To test the clay, boil some of it in distilled water for several hours with frequent stirring.

Allow it to settle and decant or filter some of the clay solution. Heat the latter and add a few drops of the barium chloride solution. If there are any sulphates present, a white precipitate will form, making the water cloudy. The addition of a little muriatic acid to make the solution acid will dissolve any white precipitate except the barium sulphate, and if the solution remains cloudy sulphates are undoubtedly present in the clay.

The water used in clay manufacture can be tested in the same way. If the water or clay contains sulphates in any considerable amount, we may expect scumming in the drying process, especially if the clay contains lime. It is interesting to note that a very small amount of sulphur trioxide, only .65 per cent. or about .07 of an ounce per brick will cause decided efflorescence.

The sulphates of the alkalies, if they come to the surface, may be volatilized and driven off in the burning and the sulphates of magnesia may be decomposed.

Finger Marks on Ware

Most of our crude oils contain sulphur. Even oils used in dies and on the cutting table may contain some sulphur. However, scumming and efflorescence are very seldom directly traceable to this source.

Finger marks on clay ware where the pieces were handled from the off-bearing belt or press are not uncommon on brick, tile or sewer pipe. These may be due to the removal of the oil at those spots which permits the flow of water and evaporation at these points. Moreover, stiff mud products when they come from the machine have a dense face. Wherever this face is touched by the fingers the surface is more or less broken and the flow of the solutions will naturally be to these open places. Thus in both of these instances efflorescence is facilitated when the finger marks are produced.

Quantity of Water Used

The next place in which we are interested in whitewash possibilities is in the dryer. Here is where the first signs of efflorescence show up. The soluble sulphates in the clay which are taken up by the water used in making up the ware or which may be in the water itself, are brought to the surface during the drying process, and because of it and with the evaporation of the water, are left on the surface as a white coating which is efflorescence. Sometimes, due to the similarity of the color of dried ware, this efflorescence is not readily discernible.

The quantity of water used in the manufacture of clay products has also a marked effect on the degree of efflorescence and also upon the effectiveness of overcoming the trouble. In order to get a saturated solution of sulphate of lime, 400 parts of water are necessary for each part of sulphate. If the clay is

SUGGESTIONS FOR PREVENTING WHITEWASH

Use freshly mined, unweathered clay.

Weather clay thoroly to enable washing out of soluble salts.

Be careful as to tempering water.

Use barium compounds to precipitate soluble salts.

Dry ware rapidly.

Prevent condensation in dryer.

Do not use sulphurous gases in dryer.

Water-smoke ware uniformly with good draft.

Use a low sulphur fuel.

Burn with alternating reducing and oxidizing conditions.

Coat brick with coal tar or wheat flour.

Burn brick hard and make impervious.

Store brick on planks.

Be careful in use of mortar.

pressed dry or nearly dry, there can be no solution of the sulphate, and without solution none of it can come to the surface. The greater the amount of water we use in the manufacture of the ware, the greater the amount of sulphate which can pass into solution and which will subsequently be brought to the surface.

Dry or semi-dry pressed brick are less troubled with scumming, first, because very little water enters into the make-up of this brick; second, because the brick are dried in the kiln where they are faced and the ends set close together, and the drying is largely thru the side of the brick where any scum that might appear would not be harmful; third, dry pressed brick are more porous near the surface than mud brick, and the evaporation may proceed at a sufficient depth below the surface to hide any scum.

Quick Drying May Help

Quick drying will often reduce whitewash by holding the whitewash inside of the product and it thus is trapped. The mechanics of this is simple and depends upon the property of capillary tubes. A simple experiment will make this clear. If a strip of filter paper be hung with one end in a solution of potassium permanganate (which is a purple colored solution), as the solution ascends the paper it will be noticed that the water is traveling faster than the permanganate. The clear strip of the water will grow broader until the top of the paper is reached. This is due to the fact that the wet paper has a stronger attraction for the salt than the water, and consequently the salt cannot travel until enough of it is attached to the fibers of the paper to allow the water to draw the salt higher. Just why this should be is not known, but it is a phenomenon chemists have named adsorption. So when brick or clay ware is dried quickly, the water is evaporated before the salt reaches the surface in sufficient quantities to cause trouble. Obviously, when the clay will not permit of rapid drying this method would be infeasible.

Above the Doorway of This Church and to Right of Large Window Brickwork Is Badly Discolored by Whitewash.

Danger from Sulphur

Another cause of whitewash may be attributed to the dryer, which is scumming. When waste heat is used, there is always more or less danger of sulphur gases coming from the cooling kilns into the waste heat system. Bits of coal in the ash pits will continue to give off sulphurous fumes until practically cold.

This View of Same Church as in Other Column Shows Blotchy Appearance of Brick Work Marred by Scum.

It must also be remembered that the clay contains pyrite, which is roasted out in the burning, and from this source we get sulphurous acid gas, and introduce it into the dryer. By introducing sulphurous acid gas, which becomes sulphuric acid in the presence of moisture which is present in the dryer from the evaporation of water in the brick, the carbonate of lime contained in clay will be quickly decomposed and sulphate of lime formed. This sulphate of lime is then responsible for scumming. The length of the drying tunnels may sometimes be responsible for this. In a long tunnel the air may become saturated before the end of the tunnel is reached, and beyond the saturation point there will be a deposit of moisture, dew or sweat on the ware. This moisture then absorbs the sulphur gases. An investigation of the dryer will sometimes show this phenomenon occurring.

Why Burning May Bring Out Whitewash

In the burning process there is plenty opportunity for both scumming and efflorescence. The coal or oil burned in kilns, especially bituminous coal, contains sulphur in the form of pyrites or marcasite as well as free sulphur. Pyrite is generally easily seen in the coal as bright specks, and is commonly known as sulphur. When the coal is burned the iron sulphide is oxidized and sulphur dioxide, a gas, results. This passes thru the kiln with the other gases. The sulphurous acid formed by the combination of sulphur dioxide and moisture reacts with the carbonates and other calcium salts in the clay to form sulphates, which are stable under all kiln conditions except a reducing fire. Thus it is possible that a clay which did not originally contain any sulphates could show whitewash, and experiments have shown that this is a very frequent cause.

The pyrite contained in the clay will also be a source of sulphur. A temperature of 750 deg. F. is required to start the sulphur from pyrite by volatilization. The top courses of the kiln are often heated above 750 deg. while the bottom courses still contain sufficient moisture to unite with the sulphuric acid formed and cause scumming. During the burning, it may happen that the draft is poor or uneven. During water-smoking especially, care must be taken in order that the water evaporated from the brick nearest the heat is not condensed on the cooler ware farther away from the fire.

Faulty Draft During Water-smoking

It is often observed that brick in the colder parts of the kiln show whitewash when the rest of the ware is free from it. This can be explained by the fact that the brick in the warmer parts of the kiln begin to give up their water before the other parts become heated. These colder brick then would condense this water vapor containing sulphuric acid from the kiln gases and absorb it. The absorbed acid acts on the lime, and so forth, forming sulphates, which are left on the surface of the brick.

Whitewashing of Brick Work Is Very Noticeable on the Above Building—Especially Near Roof.

Again, it is a fact that a kiln set wet will easily whitewash. This can be explained by the absorption of sulphurous gases by the water in the brick, and as the acid will penetrate all parts of the brick thru diffusion, sulphates will form and be carried to the surface of the brick as it dries out. There are probably other salts, chlorides, nitrates, and so forth, which occur in minute quantities that contribute their share to the trouble, but they are very rarely present in large enough quantities to cut any figure.

Calcium Sulphate Most Common

The composition of wall-white is somewhat more varied than kiln-white. A group of buildings at the University of Illinois were studied and it was found that the sulphates of magnesium and calcium are the most constant constituents of efflorescence, altho sodium and potassium may be present. The carbonates are also fairly constant parts of the whitewash, and occasionally chlorides may be present.

Efflorescence comes not only from the gradual leaching out of the soluble sulphates in the clay which have come thru the burning, but also from the breaking down of the more imperfect silicates, and a combination of the bases with sulphuric acid from the atmosphere or from any remaining pyrite in the burned ware. In this way we may explain why brick may be exposed for a long time without any sign of efflorescence, and then suddenly blossom out with it.

Rain May Bring Out Salts

Wall-white or efflorescence is often brought out after a heavy rainstorm. The rain entering the brick, upon re-evaporation carries to the surface some of the soluble salts. However, this often soon disappears by a following rain, which washes off the salt on the surface. Sometimes this efflorescence will collect in blotches, in which case it may be troublesome. A solution of muriatic acid will take this off, and if it reoccurs frequently the walls may be treated with paraffine or linseed oil, which will darken the brick but not conceal them entirely, and will make them impervious to the rain.

The question occurs to the reader, why, if scum is a soluble salt deposited from solution which goes thru the burning unchanged, it becomes insoluble? It is established that whitewash is chiefly made up of sulphates and lime. The alkali sulphates are usually volatilized in the burning and driven off, but the sulphate of lime remains unchanged. It may be broken up at a high temperature under reducing conditions, and the lime content pass into silicate formation, but under ordinary common brick kiln conditions and temperatures, it remains largely as sulphate, and if so, should be soluble and removable by washing. But this is not always the case.

How Scum Becomes Insoluble

This may be explained by the action of silica which may coat the scum and attach it to the surface of the brick. The silicates which are insoluble may hold the soluble sulphates and prevent them from being washed away.

The sulphates when once formed cannot be removed in an oxidizing flame at any temperature or area reached in the kiln. In reducing flame the sulphates are reduced at temperatures of about 1,830 deg. F. to sulphides. The lime and magnesium enter into combination with the silicates of the brick, while the sulphur is driven off with the gases. By the use of this principle it may be possible to drive off the whitewash by finishing the burn under reducing conditions. This has the disadvantage of darkening the color of the brick and also causing the slagging of the iron into a ferrous silicate. A method that has been used in

WHERE ARTICLES ON WHITEWASH MAY BE FOUND

Seger's Collected Works:
- The Effects of Sulphur in Coal Upon Clay Products, p. 259.
- Efflorescence on Terra Cotta Wares, p. 265.
- Green and Yellow Efflorescence on Face Brick, p. 269.
- Admixture of Compounds of Barium With Clay in the Manufacture of Face Brick, p. 283.

Collected Writings of Hermann A. Seger:
- On Barium Compounds as an Addition to Clay in the Manufacture of Face Brick, p. 396.
- Yellow and Green Efflorescence on Brick Fronts, p. 381.
- A Contribution to the Knowledge of Efflorescence on Terra Cotta, p. 376.
- The Influence of the Sulphur in Coal Upon Clay Wares, p. 369.

J. C. Jones:
- Efflorescence of Brick, Trans. A. C. S., Vol. 8, p. 369.

Charles F. Binns:
- Efflorescence and How to Stop It, Brick and Clay Record, November 18, 1913, p. 1017; March 27, 1917, p. 659.

A. E. Williams:
- How to Prevent Efflorescence in Finished Brick Work, Brick and Clay Record, September 7, 1915, p. 341.

Ellis Lovejoy.
- Scumming and Efflorescence. (Booklet may be obtained from Brick and Clay Record Book Department.)

Germany is to coat the brick on the face as they leave the machine with coal tar or wheat flour. As this burns away it has a strong reducing action and removes the whitewash, as just explained.

Barium Carbonate Reduces Whitewash

Some of the preventatives for scumming and efflorescence are intimated in the preceding matter. If the cause is wholly or in part due to slow drying, condensation in drying, sulphur in the gases, impure oil or impure water, defective water-smoking, high sulphur fuel, and so forth, the cure is obvious. If the trouble cannot be overcome any other way, barium salts may be resorted to. The use of barium carbonate and barium chloride transforms the soluble sulphates into insoluble sulphates of barium, which is not leached out. Barium carbonate is also a very insoluble compound and must be finely ground and very thoroly mixed with the clay to accomplish the end that is sought. The correct amount of barium, which necessitates a chemical analysis for its determination, should be added to the clay as it enters the pug-mill. The carbonate is perfectly safe to use, as neither an excess of the barium nor the calcium carbonate formed will cause efflorescence that will remain permanent. Its success depends on the thoroness with which it is ground and mixed with the clay.

The chloride, on the other hand, is soluble and consequently does not need much care in grinding and mixing. As it is soluble it is rather dangerous to use, for any excess is carried to the surface of the brick and forms a whitewash with the sulphur in the kiln gases. Its by-product, calcium chloride, is also soluble, and is liable to form whitewash in the same way. The Germans formerly used both carbonate and chloride, adding enough of the chloride to overcome most of the whitewash and depending on the carbonate to take care of whatever whitewashing salts remain.

A sewer pipe plant tried to use barium carbonate to eliminate whitewash on its ware but found it ineffective. Barium hydroxide was then tried and was found to give much better results.

How to Introduce Barium

The quantity of barium carbonate used by one brick manufacturer is approximately 28 pounds per thousand brick. The cost of material hence added about 42 cents per thousand to the cost of manufacture. Not only was whitewash eliminated in this case, but a richer color of red was obtained.

The method of applying the barium carbonate or other barium salts is usually to place two large vats equipped with a stirring apparatus operated by motors at a point above the pug-mill. These blungers are then prepared so that there will always be a constant source of material. The solution is then introduced into the pug-mill and used for tempering solution. Some manufacturers introduce the barium carbonate into the dry pans, where it is mixed with the clay, but this is not as satisfactory as the other method.

A simple method of determining whether the burned brick will effloresce or not is to place a few samples on end in water, about half of the brick being submerged and the other half exposed to the air. Thus water may travel thru the pores of the brick and evaporate on the exposed surface. If they contain soluble salts the dry end of the brick will show efflorescence in a few days, at least within a week. In this test distilled water should be used. Condensed steam is usually handy at any factory. Tap water may be used, but there is a possibility of the efflorescence then being due to the water.

Mortar Should Be Watched

There are many cases where efflorescence on brick work is due directly to the mortar, which contains sulphates, carbonates and chlorides of calcium, magnesium, sodium and potassium. The rain washing the mortar joints carries the soluble salts from the mortar over the face of the brick, and frequently the brick are condemned when the mortar is to blame. It would be well for the brick manufacturer to first make sure that his product does not contain soluble salts enough to give trouble by using the simple test mentioned above, and then emphasize the fact to the buyers of the brick that the contractor can prevent in an inexpensive manner this efflorescence from appearing.

The case of brick efflorescing on an otherwise beautiful job of brick work is often a hard blow for a manufacturer to live down. Both the architect and contractor should be appealed to in the use of a proper mortar for brick work.

In the storage yard it is not infrequent that efflorescence will appear on the brick. This has been found due to the fact that kiln clinkers were used for filling the grounds. These clinkers will fill the soil with soluble sulphates, and thru capillary attraction these sulphates will be carried to the surface of the brick work thru rain and contact with the soil. In some instances brick piled upon strips of wood, leaving an air space under each bench, or upon brick pavement, have no more been troubled with efflorescence.

It happens quite often after a kiln of sewer pipe is finished, and the ware drawn, that a white scum shows on the ware after it has been in the open a short time. This is due to excess salt fumes in the kiln atmosphere, which had not been drawn off at the stack, but were redeposited on the ware. As a matter of course, the first heavy rain will remove this from the surface of the ware; but to the uninitiated, this often appears a serious defect, and may result in loss of business. In order to eliminate this scum, a light fire should be applied after the salting has been completed, and most of the salt has decrepitated. At the same time the stack damper should be raised high. The added fire will have a tendency to burn up what salt may remain in the fire holes, while the increased draft will draw the fumes from the kiln. The small fire will not affect the ware, if it is not applied until the kiln has evidently started cooling. Scumming of this nature can be eliminated completely by following this simple procedure.

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DISCARD 4 MORE PAVING BRICK SIZES

As the result of cooperative action on the part of engineers representing the principal national engineering organizations, the Bureau of Simplified Practice of the U. S. Department of Commerce, and representatives of the paving brick manufacturers of the United States, sizes and types of paving brick were further reduced to seven recognized standard types and sizes. It will be remembered that about four months ago deliberations resulted in the elimination of 55 of the 66 varieties.

This step toward standardization which the paving brick manufacturers have taken comprises the first concrete results of Secretary Hoover's campaign to eliminate waste in industry by eliminating excess and needless varieties.

The following are the four additional sizes eliminated by the committee: Vertical fiber lug, 3x4x8½ inch; vertical fiber lug 3½x4x8½; wire-cut lug hillside, 3½x4x8½; repressed lug 3½x3½x8½.

The following remain as the seven recognized types and sizes: Plain wire-cut, 3x4x8½; plain wire-cut 3½x4x8½; repressed lug 3½x4x8½; wire-cut lug, 3½x4x8½; wire-cut lug, 3½x3½x8½; wire-cut lug, 3½x3x8½; repressed hillside, 3½x4x8½.

The committee decided that with four eliminations it had proceeded as far as was desirable until there was further reactions from producers and consumers. It was therefore concluded tha no further eliminations would be considered until March, 1923, at which time data on 1922 shipments would be available.

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MOVES TO NEW OFFICES

The Kittanning Brick & Fire Clay Co., Pittsburgh, Pa., has moved its office from 914 Empire Building to 710 Chamber o Commerce Building. This company's plant is located at Kittanning, Pa.

Business Briefs and Trend

WHY BUILDING SHOULD NOT BE PUT OFF

The following item was reprinted from the April 12 issue of Engineering and Contracting.

"During the last six months of 1921 more long time bonds for public works were sold than during any previous period of twice that length. Since such bonds are sold well in advance of the construction that they cover, it is evident that the year 1922 will break all records for public works construction. Interest rates on such bonds have declined at an astonishing price during the last year, partly because of the business depression and partly because such bonds are exempt from income taxation. No public work need now be postponed because of high interest rates.

"There is still some talk about 'going slow' on public works until freight rates and prices come down, but students of price and wage levels are now pretty much in accord on the proposition that price and wage deflation has nearly, if not entirely, run its course.

"Atho freight rates are about 75 per cent. above the pre-war level, there is no likelihood that an average reduction exceeding ten per cent. will be made for several years. Such a reduction would bring freight rates to a point about 60 per cent. above the pre-war level, which is about the present excess of the cost of living over its cost in 1913. To bring even a ten per cent. reduction in freight rates will require a reduction of fully 20 per cent. in the wages of railway employes, if railways are to earn six per cent. on their invested capital. If they are to earn six per cent. on their present cost of reproduction less depreciation freight rates will have to be raised. All in all, it is quite as likely that freight rates will be ten per cent. higher five years hence as that they will be ten per cent. lower.

"For 80 years average wages in America have been closely proportional to per capita money. Taking ten years' averages (so as to eliminate fluctuations, due to 'good' and 'bad' times) the average wage has been almost exactly proportional to the average per capita money during the past ten decades. Per capita currency in America is now 50 per cent., and per capita gold is 80 per cent. above the amount in 1913. With the revival of business paper money will increase, so that in all probability the increase in per capita currency will approach or even exceed the increase in per capita gold since 1913. Wages will follow the per capita money, unless 80 years of wage history are departed from. Therefore wage levels will probably be higher two or three years hence than they are today.

"2½ years ago the writer testified in a federal court in Texas that he believed that prices and wages would fall, but that the fall would be arrested when a level about 60 per cent. above the 1913 was reached, and that thereafter the decline, if any, would be very gradual. This prediction was based on the per capita level of money, and the events have thus far justified the prediction. There were many who at that time believed that price and wage levels would not recede. There were others who predicted a speedy decline to pre-war levels. Today, after a year of stationary wholesale price level (average of 326 commodities), it is apparent that price deflation has run its course; and the prophets of continued decline to pre-war levels have almost ceased talking. We are now on the first stages of rising wholesale prices in most lines. No one can tell how long the rising period will continue, but there is little doubt that it will last until the wholesale price index reaches fully 160, or 60 per cent. above the 100 per cent. level of the year 1913."

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BANK CLEARINGS GAIN 7 PER CENT.

Business reports from all over the country show that weak and unstable business enterprises, the mushroom business of the war period, have to a large extent been weeded out and a sounder bottom and basis for industry been reached. Bank clearings for March show an increase of seven per cent. over March 1921, and commodity prices dropped one per cent. during the month.

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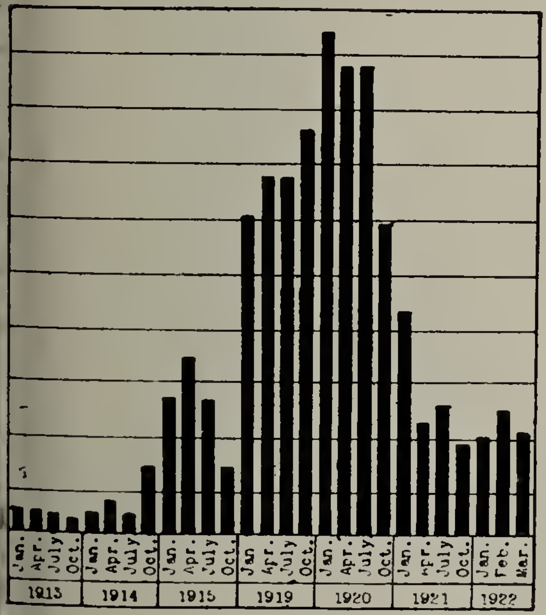
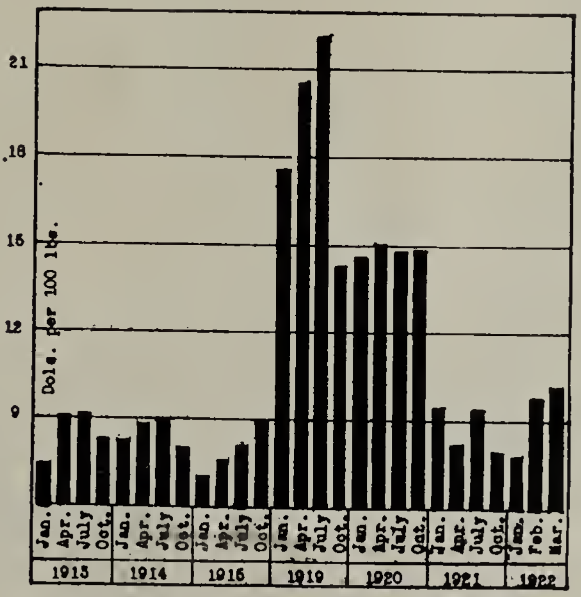
SOUTH TO SPEND $400,000,000 FOR ROADS

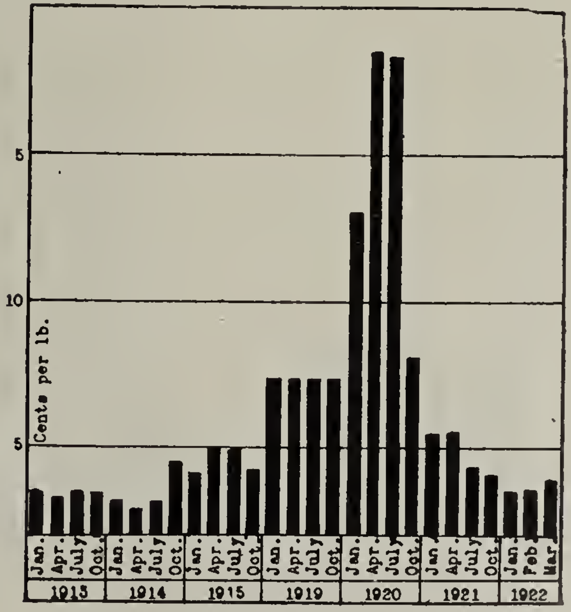
A survey of the reports which have been gathered from the State Highway Departments of 16 southern and southwestern states shows that under their direction alone nearly $200,000,000 in funds are available for highway work to be done in 1922, says the Blue Book of Southern Progress. If to these figures is added the work which it is estimated the counties will do it may be said that $400,000,000 will not overestimate the amount the South will have to spend in 1922 for highway improvements. This



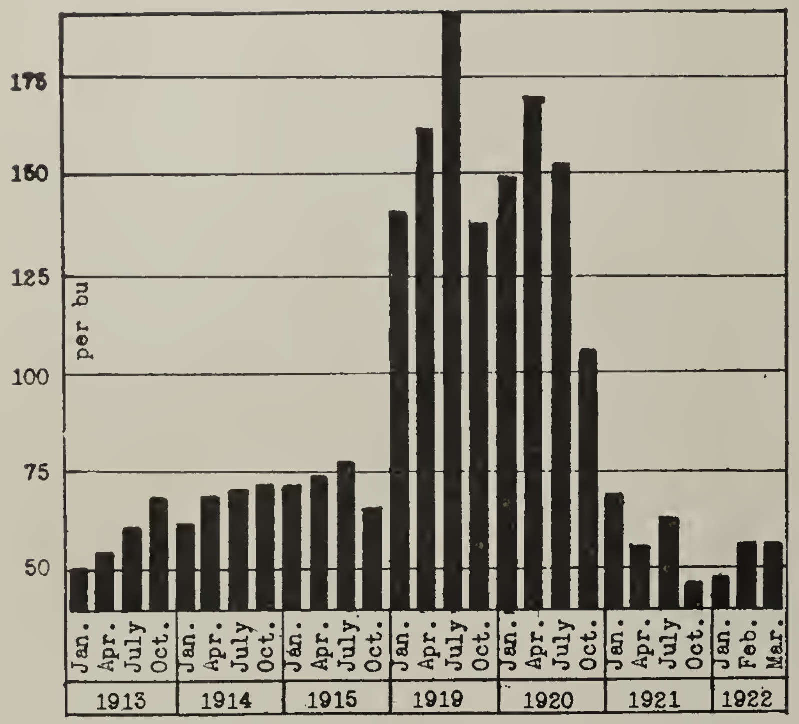
Wholesale Price Trend in Cents Per ushel of No. 1 Northern Spring Wheat, hicago.



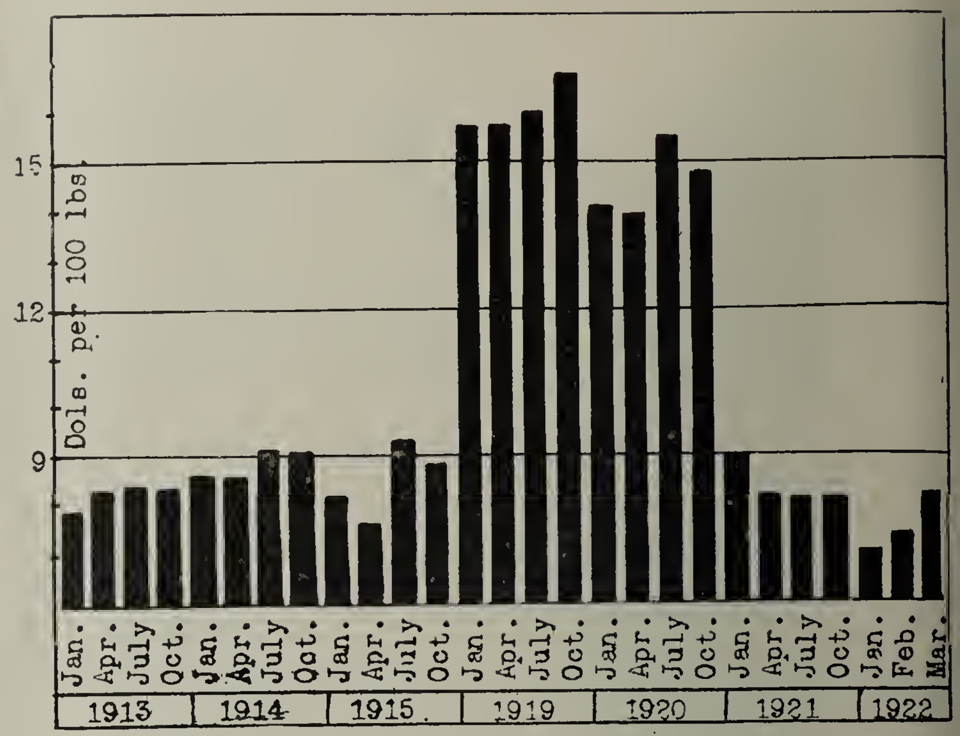
Wholesale Price Trend of Good Merchantable Hogs—Pigs and Rough Stock Excluded, Chicago.



Wholesale Price Trend of 96° Centrifugal Sugar, Duty Paid, New York.



Wholesale Price Trend in Cents Per Bushel of No. 2 Mixed Corn, Chicago.



Wholesale Price Trend of Fair to Choice Native Steers, Chicago.

conclusion is borne out by the very large way in which plans have been made for road building in the South. Every southern state now has a thoroly organized highway department, and each one has worked out a definite program for comprehensive state development, which means that the improvement being made each year will ultimately form a network of connected state highway systems.

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U. S. FACTORY EMPLOYMENT INCREASES

One of the surest signs that industry is gradually recovering can be seen in the figures of last month's survey of the Department of Labor. On April 1 there were employed 2.5 per cent. more workers in the mills and factories of America than on March 1. This is seven per cent. better than on July 1, which was the low mark. Of 14 groups into which the industries were classified, ten registered an increase of workers during March and only four showed decreases. The upward movement of farm prices seems to be reflected in growing activity in the industrial centers and this is probably the reason why the Middle West is leading the rest of the country. In Chicago the taking up of slack in industrial employment amounted to 5.5 per cent.

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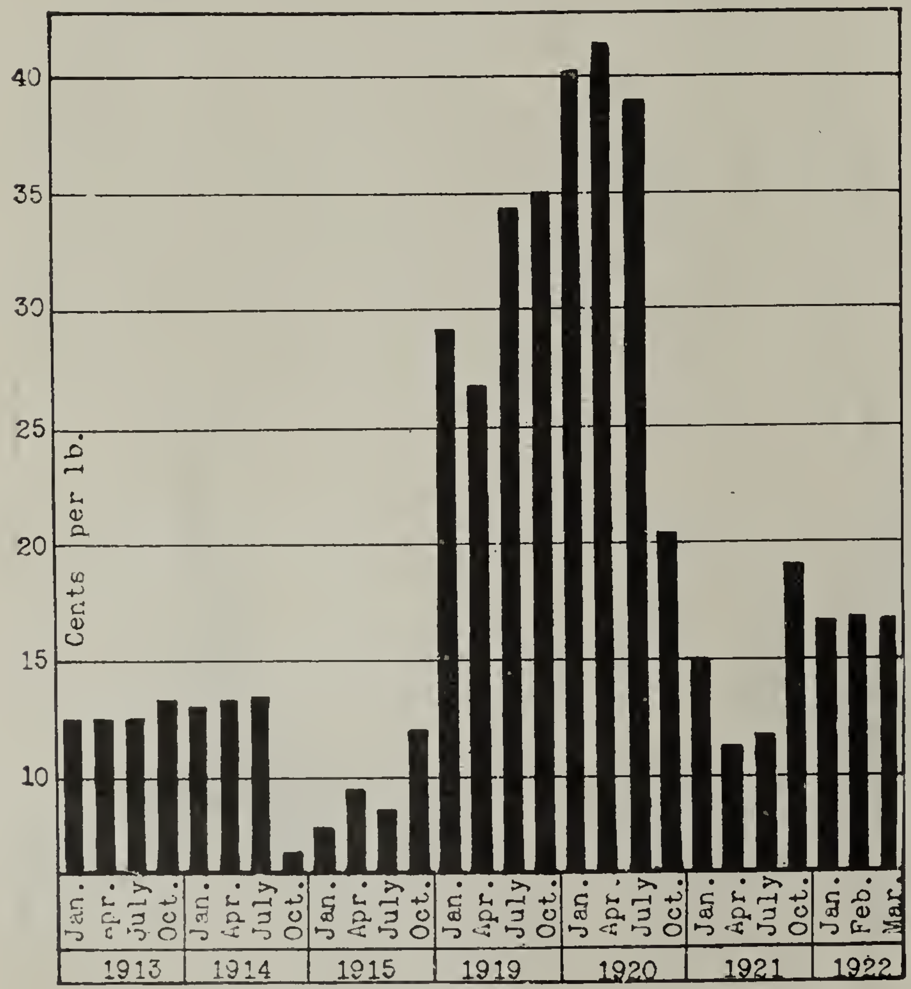
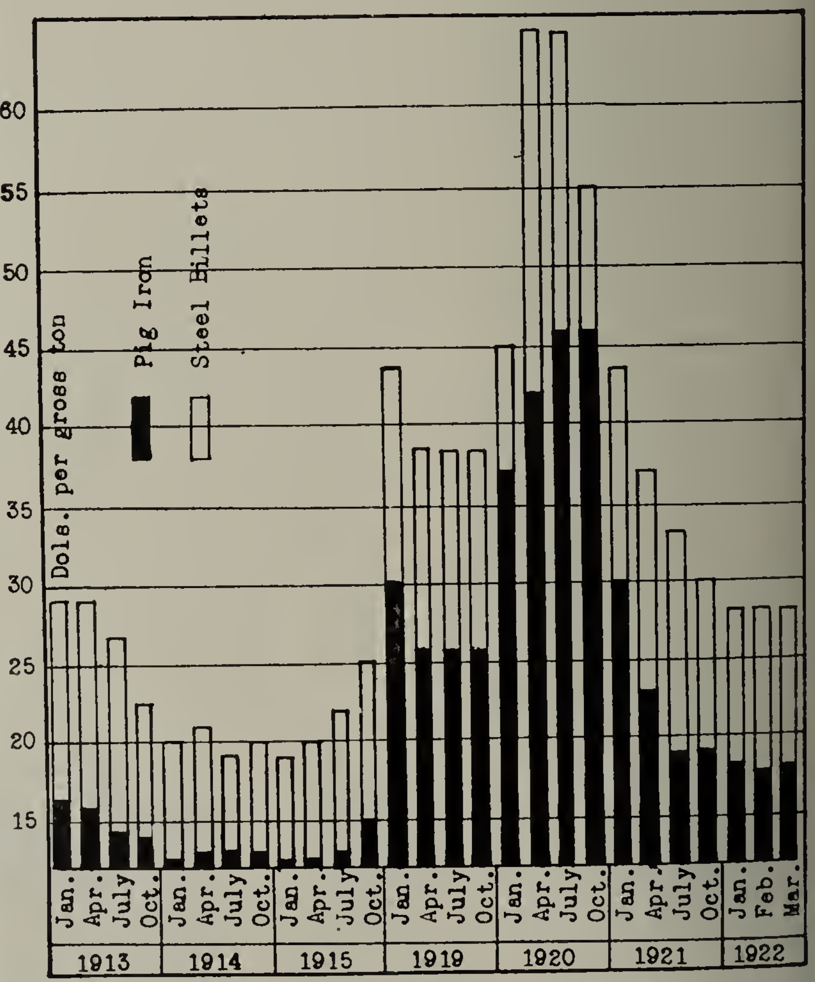
N. C. P. I. A. MEETING AT CHICAGO

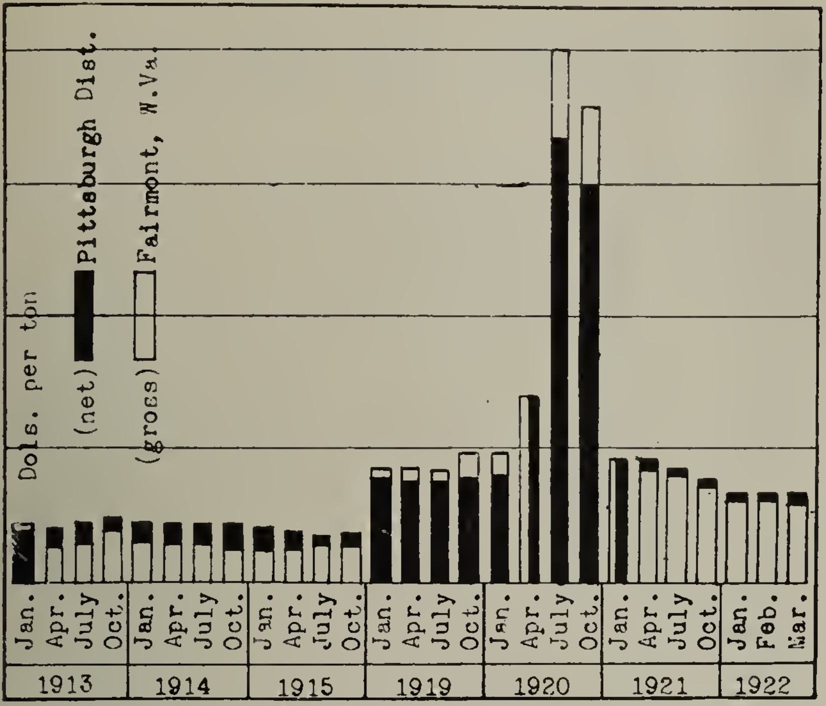
As announced in the last issue of Brick and Clay Record the first annual meeting of the National Clay Products Industries Association will be held at the Congress Hotel, Chicago, Ill., April 21. This association is composed of manufacturers in all branches of the industry and has for its object the regulating of labor in the clay plant, endeavoring to eliminate all troubles arising from differences between the management and the personnel. The N. C. P. I. A. aims to take the place in the smaller



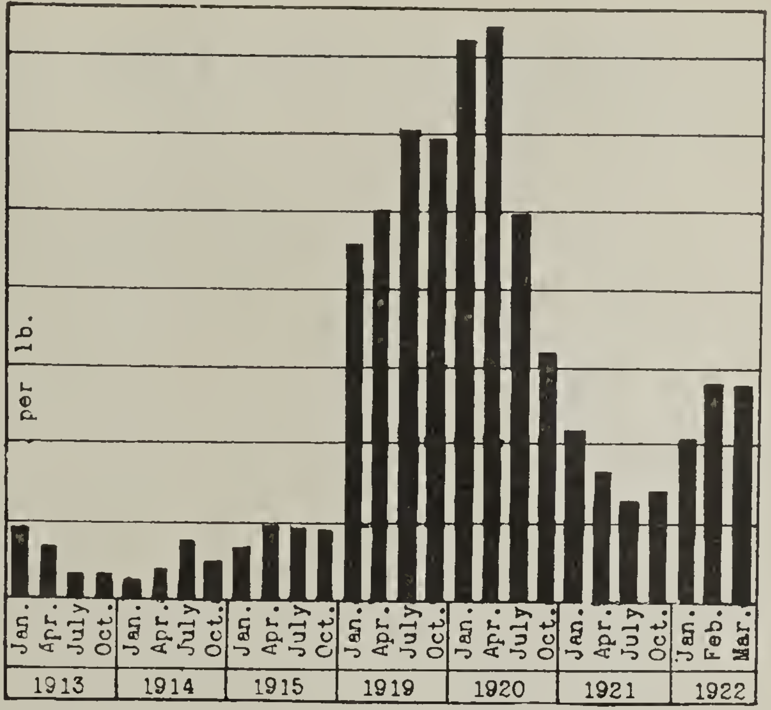
Wholesale Price Trend of Middling Cotton, Spot, New Orleans.



Wholesale Price Trend of Valley Furnace Basic Pig Iron and Open Hearth Steel Billets, Pittsburgh.



Wholesale Price Trend f.o.b. Mine of Bituminous Run-of-Mine Coal from Pittsburgh and Fairmont Districts.



Wholesale Price Trend in Cents Per Pound of Ohio Fine Delaine Wool, Clean Basis, Boston.

plants of the industrial relations department established in some plants employing thousands of men.

A very interesting program has been arranged and capable speakers have been secured to address the delegates. Discussions on questions relating to methods of dealing with labor and other personnel problems will insure a very interesting meeting.

* * *

DISCUSSES CONSOLIDATION OF RAILROADS

At a hearing to begin on April 24 before the Interstate Commerce Commission the question of consolidating the railroads into a limited number of systems will be discussed. The first sessions will be devoted to the roads in the Southeastern region. This hearing will be the first action of the commission in this matter since the adoption of its general plan last August.

* * *

OUT OF THE EARTH

Ask your friend what the fourth most valuable American mineral product is in terms of total production. Ask him where gold stands. Then show him this 1920 table which surprises most people.

Coal (soft)	$1,950,000,000
Iron (pig)	1,137,926,000
Petroleum	1,360,000,000
Clay Products	364,220,000
Copper	222,467,000
Stone	120,500,000
Lead	76,296,000
Sand	62,694,000
Silver	57,420,000
Gold	49,509,000

The saying that our wealth comes out of the earth is well known, but little understood.—*Collier's, February 25, 1922.*

* * *

APPROPRIATE $140,000,000 FOR ROADS

The Committee on Roads of the House of Representatives has approved a bill which will carry an appropriation of $65,000,000 for the next fiscal year and $75,000,000 for the fiscal year ending July 1, 1924. The bill provides for appropriations for the two years only. The committee placed into the bill a proviso which will limit federal aid to $12,500 per mile of road to the next fiscal year and the limit for any year thereafter will be $10,000. This proviso is meeting with strenuous objection on the part of the states and it is hoped that it will be stricken from the bill on the floor of the House.

TO ESTABLISH EXTENT OF LEGAL TRADE ASSOCIATION ACTIVITY

Senator Edge of New Jersey and Representative McArthur of Oregon have decided that there is only one method which will clarify the conditions surrounding the business world today. They have introduced a resolution calling for the appointment of a committee to consist of three United States senators and three members of the House of Representatives, whose duty it shall be to investigate the prevailing economic conditions and recommend legislation which it is hoped will bring some degree of comfort to the industrial world. The resolution states clearly the reasons and purposes of the inquiry. It is as follows:

"Whereas, business has been suffering severe depression from which its reconstruction should be stimulated by every legitimate means; and

"Whereas, business procedure that will without protesting monopolies eliminate waste in production or distribution, lower costs, simplify and standardize methods, increase efficiency and the morale of business is a beneficial factor in economic progress; and

"Whereas, business is hesitating because unable to secure guidance, legal or governmental, which will clearly indicate the proper lines of conduct in business association; and

"Whereas, business is entitled to know in definite terms what it legally can and cannot do; therefore, be it

"Resolved, by the Senate and House of Representatives of the United States of America in Congress assembled,

"That a joint committee of Congress is hereby created, to be composed of six members, three of whom shall be appointed by the President of the Senate and three by the Speaker of the House of Representatives;

"That it shall be the duty of the committee to investigate existing conditions of industry and commerce in the United States and the markets of foreign countries in so far as the same directly affect industry and commerce of the United States, including questions as to production, distribution, labor and business methods, and to report to Congress and to suggest such legislation, if any, as it may deem best upon these subjects with special reference to the most effective ways and means to revive industry and to stimulate foreign and domestic trade, to stabilize conditions as to the future, to minimize the danger and distress of recurring periods of business depression, with their resultant cycles of general unemployment, and to define the rights and limitations of cooperative organizations as distinguished from illicit combinations in restraint of trade."

The committee is directed to submit its final report to Congress by December 4 next.

Are You Out of Line?

Some Plants Are Still Shut Down With No Business in Prospect—Others Are Active—Where Do You Stand?

WHEN CLAY PLANTS RESUME the purchasing of clay-working machinery on a large scale it means that either the clay manufacturer is getting busy and throwing out some old obsolete equipment, making repairs and lowering production costs, or he is enlarging his plant and getting it in shape for real activity. Needless to say, there can be no great amount of business for a manufacturer of clay machinery unless there are orders either on hand or in sight among clay plants.

The fact that clay plants are doing big business and are getting ready for future activity is shown by the accompanying reports made by various manufacturers of clay plant machinery.

Those manufacturers who are not preparing for future business had better reconsider their position and see whether or not they are not out of line. There is plenty of evidence at hand to warrant looking into the immediate future with bright prospects.

Machinery Manufacturer Very Busy

Thomas A. Hibbens, manager of the Stevenson Co., Wellsville, Ohio, said, "During January our tonnage exceeded any previous month in the history of our business and orders continue to come in in a most satisfactory manner. Our plant is operating with a full crew 14 hours three days a week, and nine hours the remaining three."

E. E. Berry, sales manager of H. Brewer & Co., Tecumseh, Mich., of whom we inquired as to conditions as he found them, replied:

"We think it a good idea to instill in the minds of the clay industry that we are not on the down grade but that business is gathering momentum that will soon use up all available stocks.

"We have noticed a depression on the part of the clay plants to withhold operations until stocks have begun to move, and it is our candid opinion that such firms will lose considerable business because of lack of supply a little later on as we find every indication for a good substantial building program this year.

"We are in particularly good position to predict the probable demand because of our line of concrete working machinery, concrete mixers, and so forth, for which there has been a greater demand and more business in sight than for many years past. This indicates that there is much preliminary work laid out which will later demand clay ware.

"We believe that the plants which go ahead and build up a good fair stock will not be disappointed in moving it, providing such products are sold at reasonable price and profit."

Very Optimistic as to Future

"We find that many brick plants have been getting ready for future business and believe they will not be disappointed. We have found business very much better and with a consistent increase right along so that our feeling is highly optimistic for the future," said O. N. Stoler, sales manager of the Marion (Ind.) Machine, Foundry & Supply Co.

That a much larger number of clay plants are now being remodeled and equipped for efficient operation is shown by the statements made in a letter received from E. J. Anderle, sales manager of the International Clay Machinery Co., Dayton, Ohio, in which he says:

"In the last two or three months there has been a gradual increase in business, very few large orders being placed, but a great many small orders coming in daily. This, to our way of thinking, is a more healthy sign, in that it means that buying is being resumed in a small way but on a large scale. A much larger number of clay plants are being equipped than was the case five or six months ago, all of which means that plants that have been closed down for a long period are resuming operations. That is why we call it a healthy sign and we believe that the trend of business at least in the clay industry will be upward from now on."

H. H. Freese of E. M. Freese & Co., Galion, Ohio, says that his company is finding orders so plentiful that it is running the plant at more than normal capacity. He states:

"All departments of our plant have been operated practically full time for several years past and we are now running 55 hours per week, with more than normal full force. Orders now on hand will enable us to keep this up for some time. New business is constantly coming in from all parts of the country and we are advising users of our machinery, and prospective buyers of new equipment, to place orders as far in advance as possible."

Evidence that the necessity for delaying and holding off contemplated improvements on clay plants no longer exists is brought out by J. H. Chambers, president of the Chambers Brothers Co., in a letter in which he states:

"We are in sympathy with your suggested column and from our own experience can say that business with us is improving. Orders during the month of March this year were more than double those received during the corresponding month of 1921.

"While these orders are not for large amounts, they are spread from New England to California. One very encouraging feature to us is that, in some instances they are the closing of efforts and proposals extending over a period of four or five months. Their chief significance is in the fact that they evidence the conviction that the necessity for delaying and holding off contemplated improvements no longer exists."

* * *

RAILROADS TO SPEND BILLIONS

Improvements of the country's railroad facilities is expected to result in the expenditure of hundreds of millions of dollars this year and several billions in the next few years. This purpose reflects not only the needs of the roads to rehabilitate their properties, but confidence in better times ahead. The Pennsylvania recently announced its intention of spending immediately $8,000,000 on improvements in the Pittsburgh district. This work is merely a forerunner of an improvement program to run into $100,000,000. The Union Pacific announced it will spend $20,000,000 on improvements this year and will build 100 miles of branch lines. The Philadelphia & Reading will spend about $15,000,000.

* * *

FOREIGN TRADE MEETING IN PHILADELPHIA

The Ninth Annual Foreign Trade Convention will be held in Philadelphia, Pa., May 10, 1922. The meeting promises to be interesting and many important subjects will be discussed relating to problems encountered in handling of foreign trade.

Want More Effective Trade Associations

National Federation of Construction Industries in Annual Meeting at Chicago Asks U. S. to Define Local Trade Association Activities — Advocate Educational Publicity to Encourage Home Ownership

THE FIFTH ANNUAL MEETING of the National Federation of Construction Industries was held at the Drake Hotel, Chicago, April 3, 4 and 5. The attendance varied from a maximum of a little over 300 during the hour in which Secretary of Commerce Herbert Hoover delivered his address Tuesday morning to a mere handful during the last afternoon session at which the important reports of the nomination and resolution committees were presented for adoption.

A large number of excellent papers were represented and discussions of vital problems dealing with the financial, labor, contractor and material manufacturing angles of the construction business.

Outstanding Features

Some of the oustanding features of the meeting were the following:

"The Factor of Labor in the Construction Industry," which included an address on vocational training by Hugh J. Frayne of the American Federation of Labor, Secretary Malcolmson of the Michigan Society of Architects, detailing the successful establishment and maintenance of special classes in building trades instruction; address by Benjamin Rosenthal, president of the Chicago Housing Association, whose outstanding plea was for a million new homes for the American workingman and his family *built within reach of the latter's purse,* as a vital factor in solving all labor difficulties; address by President Thomas E. Donnelley of the Citizens Committee to Enforce the Landis Award, explaining the results already obtained in securing the cooperation of architects, contractors and labor unions under the provisions of the famous decision; a remarkable record, detailed by E. J. Russell, chairman of the Board of Jurisdictional Award, who declared that 75 per cent. of the strikes in many cities were formerly due to jurisdictional disputes, but that this had now been reduced to less than 10 per cent. and all such difficulties were now being ironed out by mutual consideration on the part of the labor unions involved. The importance of promoting a public educational system that will provide trained apprentices in all construction trades was urged by Thomas R. Preece, vice-president of the Bricklayers' and Plasterers' Association of America.

Standardization and Waste Elimination

"Means Whereby All Unnecessary Waste Can be Eliminated and Practical and Feasible Standardization of Dimensions and Forms of Products Secured." The remarkable progress made in the elimination of unnecessary sizes and varieties of forms of products was detailed by a number of speakers and it was shown that the Department of Commerce thru its Bureau of Standardization as well as the United States Chamber of Commerce in cooperation with the Standardization Committee of the Federation had accomplished many astonishing results.

The most extraordinary of these achievements, illustrated by interesting charts on exposition in the conference room were recorded by the Associated Tile Manufacturers, who in the past five years have simplified trim tile patterns from a former actual total of 735 varieties to a net minimum of 115.

A. W. Whitney, chairman of the Standardization Committee, New York City, declared that in most lines of business varieties could be cut down a full nine-tenths of their present number, with profit to both consumer and manufacturer.

"How to Organize Community Construction Conferences." A very complete and practical plan which might be worked out by every town and city in the country was presented to the conference by the special committee on construction developments.

The development of a national program for own your own home campaigns thruout the country was thoroly canvassed.

The address of Herbert Hoover before the association on April 4, in which he outlines four outstanding things to be done now for the benefit of business and the welfare of the whole country, is printed elsewhere in this issue.

Discuss Trade Association Activity

President E. T. Trigg, in opening the first session of the 1922 conference, declared that perhaps the most important subject for all members of the construction industry to face was that of more effective trade associations. Speaking especially to association secretaries and other officials who were present, he said in part:

"The continued development of trade association activity along wholesome, healthy lines, sound lines that will be productive to the industry as a whole and not meet with any legal difficulties and entanglements, depends almost wholly upon what you men yourself do."

The discussion which followed under the leadership of Ralph P. Stoddard, secretary of the Common Brick Manufacturers' Association of America, who at the request of President Trigg acted as chairman for the afternoon, develops many points of vital interest and helpful suggestion for all association workers whether officials or private members.

The importance of publicity, so far as manufacturer organization was concerned, was strongly emphasized by E. R. Sturtevant, secretary of the Hollow Building Tile Association, and Mr. L. R. Putman, secretary-manager of the American Wholesale Lumber Manufacturers' Association.

The question of how to increase membership and develop more general interest among members in association activities provoked a spirited interchange. E. A. Lockland, a lumberman of Port Arthur, Tex., says:

"There is only one way to get members into your association and that is to make it profitable for them. I shall identify myself with any association which will help me get business. And the association should do its best to bring things down to where the public can buy."

Secretary Sturtevant summed it up epigrammatically:

"The best way to get members into your association is to make it more effective. Give your members in service what they pay in dues."

Important Resolutions

At this meeting of the National Federation of Construction Industries several important resolutions were passed. It was decided that the organization go on record as believing that cooperative trade associations should be relieved from uncertainties regarding the extent of operations and from possibility of unintentional violation of law by amendments to the Anti-Trust statutes which will more clearly define their extent, and will state with exactness the cooperative action permitted to such associations. The Federation believes that trade associations should be permitted to define their purposes and to specify their proceedings to the Department of Commerce for review and approval.

It was also resolved that the Federation believes it to be of the utmost importance that the financing operations for the construction of small homes should be carried on with the least possible expense to the home builder, permitting him to pay the cost of the home in installments consistent with his income.

It was further resolved that the president appoint a committee of five whose duty it shall be to investigate the possibilities of financing a campaign of educational publicity to encourage the ownership of homes by their occupants, to the end, as expressed by Secretary Hoover, that this may become more and more a nation of home owners. This committee would also be required to ascertain whether or not the various building interests can be brought together for such cooperative work.

Another resolution brought up asked that the Federation consider and make it one of its purposes to encourage the establishment of proper schools and to use other means for the training and instruction of building craftsmen.

Other important resolutions were considered.

New Directors

The roll of directors of the Association for the ensuing year will include the following nine new names: B. F. Affleck, A. M. Maddock, Capt. Chas. W. Brown, D. K. Boyd, Chas. G. Keith, Gen. R. C. Marshall, Rudolf P. Miller, F. W. Walker, and E. J. Russell. The following previously elected directors complete the roll of the Federation Board: D. A. Garber, New York; H. M. Keasbey, New York; John A. Kling, Cleveland; John L. Kaul, Birmingham; Herman L. Matz, Chicago; and Richard E. Schmidt, Chicago. The resignation of Frederick W. Upham of Chicago, a member of the board during 1921, was accepted with regrets.

At a meeting of the Board of Directors immediately following the conference, the incumbent president, vice-president, treasurer, general secretary and general counsel were retained without change, pending an early meeting of the entire board.

* * *

REFRACTORIES BUSINESS INCREASES

During the month just passed a decidedly more optimistic tone was exhibited in the refractories industry. Shipment figures of fire clay and silica brick during March compare favorably with any month during the past 18. In some cases production reached 70 to 75 per cent. of capacity with little or nothing going into stock. Purchases generally are of the small order type, carload orders being more or less frequent but seldom exceeding 200,000 brick. Iron Trade Review quotes prices on fire clay brick as follows: Pennsylvania No. 1, $32 to $35; Pennsylvania No. 2, $28 to $32; Ohio No. 1, $32 to $35; Ohio No. 2, $28 to $32; Illinois No. 1, $32 to $35; Illinois No. 2, $30 to $35; Kentucky No. 1, $32 to $35; Kentucky No. 2, $30 to $32; Missouri No. 1, $34 to $40; Missouri No. 2, $28 to $33; Maryland No. 1, $32 to $40; Maryland No. 2, $27 to $30.

Silica brick is being quoted as follows: Pennsylvania, $30; Chicago, $35 to $38; Birmingham, $40.

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DRAIN TILE MEN TO MEET AT LIMA

The regular quarterly meeting of the Ohio Drain Tile Association will be held at Lima, Ohio, April 19. At that time questions of freight rates and traffic conditions will be discussed. W. P. West of Columbus is secretary of the association.

* * *

Coal Supplies Ample for Industries' Immediate Needs

THE RECORD OF PRODUCTION of bituminous coal during March removed all reasonable doubt that the 52,500,000 net tons of soft coal in the hands of consumers on March 1 had increased to 63,000,000 tons, or more, by the opening day of the strike. The quantity on hand on April 1 was therefore equal to the maximum stock at the end of the war. The March, 1922 production was an increase over that of March 1921 of about 19,800,000 tons, or 64 per cent. and was higher than that of any previous March for the last ten years.

At the rate of consumption prevailing in January and February the reserve in the hands of consumers, April 1, was sufficient to last 52 days, if evenly divided. But stocks are never evenly divided. There are some consumers who store virtually no coal, and in some entire states the average stock is much lower than in others. Further, a certain minimum reserve is necessary for steady operation of utilities and industrial plants.

Produce 3,500,000 Tons in First Week

Back of this stock of 63,000,000 tons in the hands of consumers April 1, there was a further reserve of over 4,000,000 tons on the Upper Lake Docks, and a smaller quantity stored on the ground at the mines or at intermediate storage yards. These figures take no account of the coal on wheels, including a heavy tonnage of unbilled loads on hand at the mines when work stopped in the union districts on Saturday.

The total production of all coal—anthracite and bituminous—in the first week of the strike was the lowest in modern coal history. The output of bituminous coal dropped to approximately 3,500,000 tons, and in the anthracite region work ceased entirely. During the 1919 strike the anthracite mines operated at capacity.

From reports received it is evident that from 60 to 64 per cent. of the bituminous tonnage of the country has been closed by the strike. Of the remaining tonnage a significant portion had not been operating recently for lack of demand. In the first week of the 1919 strike 71 per cent. of the tonnage was closed. The smaller portion closed during the present strike is partly explained by the fact that certain organized districts whose contracts did not expire on April 1 have continued to operate.

Capacity Production Not Being Reached

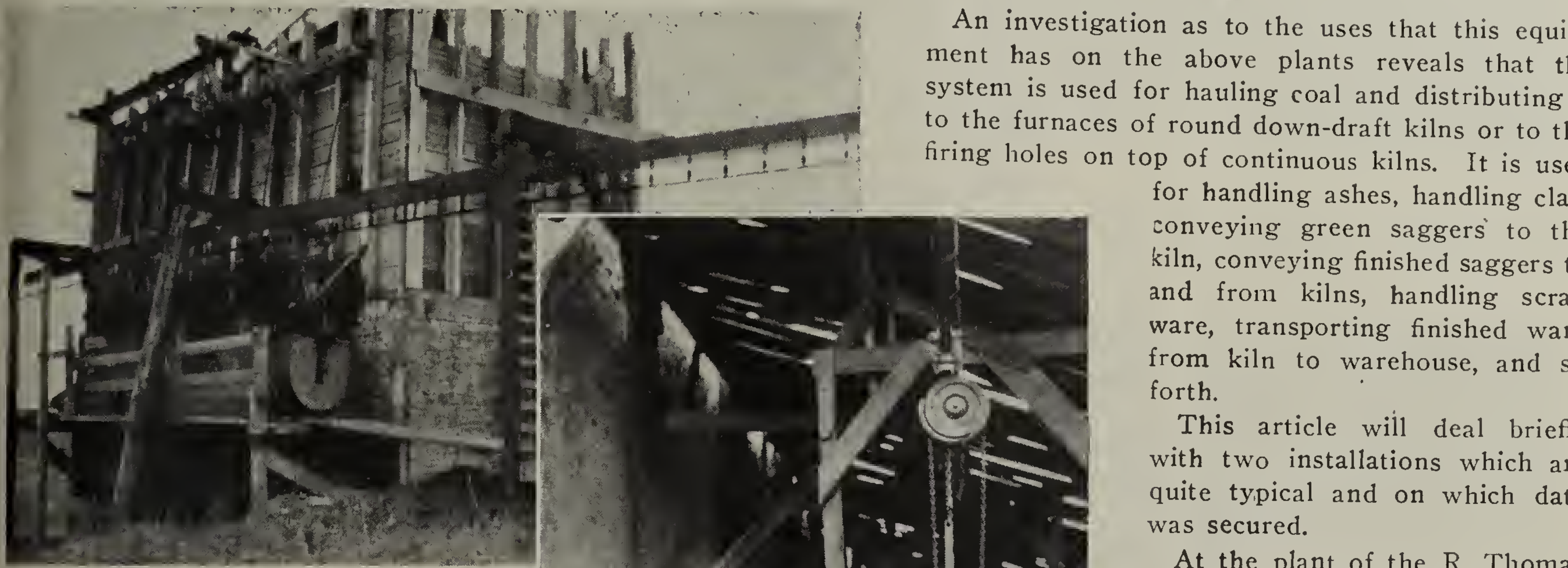
The output during the first week of the strike falls short of what the mines not affected by the strike can produce if the demand is active. From mines in many non-union districts reports of "dull market", and "no orders" have been received, and there is a large number of loaded cars unbilled on the sidings, some of which are in fields closed by the strike.

As stated it has been estimated that the reserve supply of bituminous coal is sufficient to satisfy demand for the next 52 days provided the supply is evenly distributed. If to this is added the present production of approximately 3,500,000 tons per week supplies will be adequate to take care of demands until the middle of June. These figures are of course theoretical and will not hold good under actual conditions. It is safe to say, however, that there will be no serious coal shortage experienced during the month of April.

Monorail Conveyors on Clay Plants

A Practical System of Conveying Which Can Be Used to Reach Almost Any Point on the Plant and Can Be Put to a Multitude of Uses

CONVEYING, whether it be in a pottery, brick, tile or any other clay plant, is usually a very complex problem. Especially is this true if efficiency, convenience, cost of installation and operation and other matters are given their rightful and careful degree of consideration. This article deals with a system altho old and of frequent application in other industries, and even in the clay industry for that matter, has never heretofore been described in this journal.



This Overhead Conveyor Takes the Coal from the Storage Bins Direct to the Fire Boxes in the Kiln. Top View Shows Conveyor at the Coal Storage. Center—Dumping Coal Alongside Kiln. Bottom—Section of Overhead Track Along Kilns.

Because of the apparent success of the equipment as indicated by its number of users, and the recommendations given by these users and because of the great utility and interest in the system, it is felt that the result of an investigation on the use of this equipment would be of considerable value to the readers of Brick and Clay Record.

Overhead Monorail System

The conveying system described ierein consists of an overhead monorail supported by overiead hangers, connected to the structure in which it is located, or else supported by posts and cross pieces where ther means are not available. The rail supports two sets f wheels from which are suspended rods, chains, or other upports which carry the body. The body may be a flat latform, a large bucket of several bushels capacity or any ther device to suit the purpose for which the equipment s used.

Usually a block and tackle arrangement is attached which ermits the body to be lowered or raised to suit the convenience of the operator. Due to the fact that the equipnent does not take up much space, it may be located in tight nd snug places, and will turn curves easily, and switches re often employed to permit the buckets or platforms to be ispatched to different points or departments.

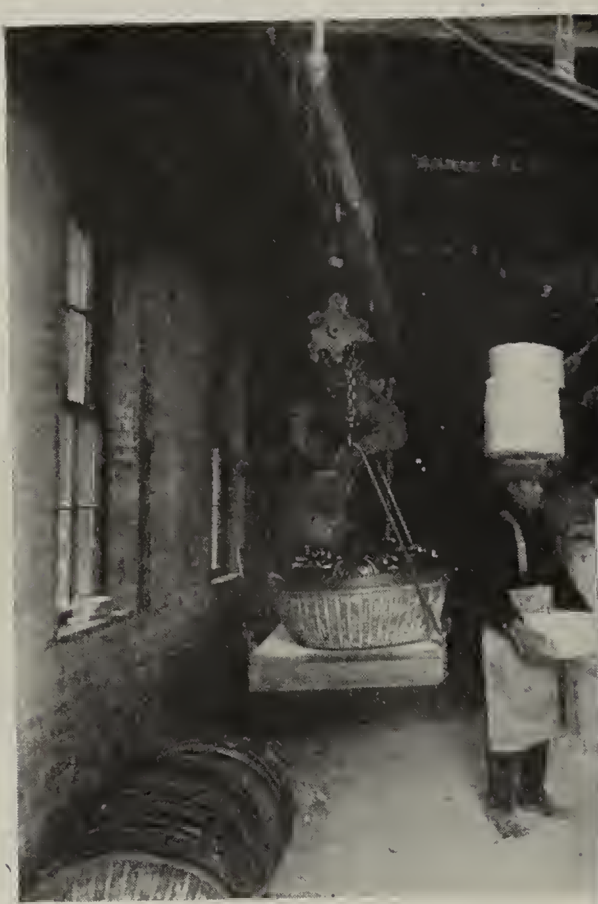
Something like 44 ceramic plants have used this installation for a period from one year to ten years, and even longer. These installations are divided among the following different kinds of plants: Building brick (face and common), 4; fire brick, 3; hollow building tile, 1; terra cotta, 2; sanitary ware, 8; dinnerware, 17; electrical porcelain, 6; ceramic tile, 3.

Many Uses for Equipment

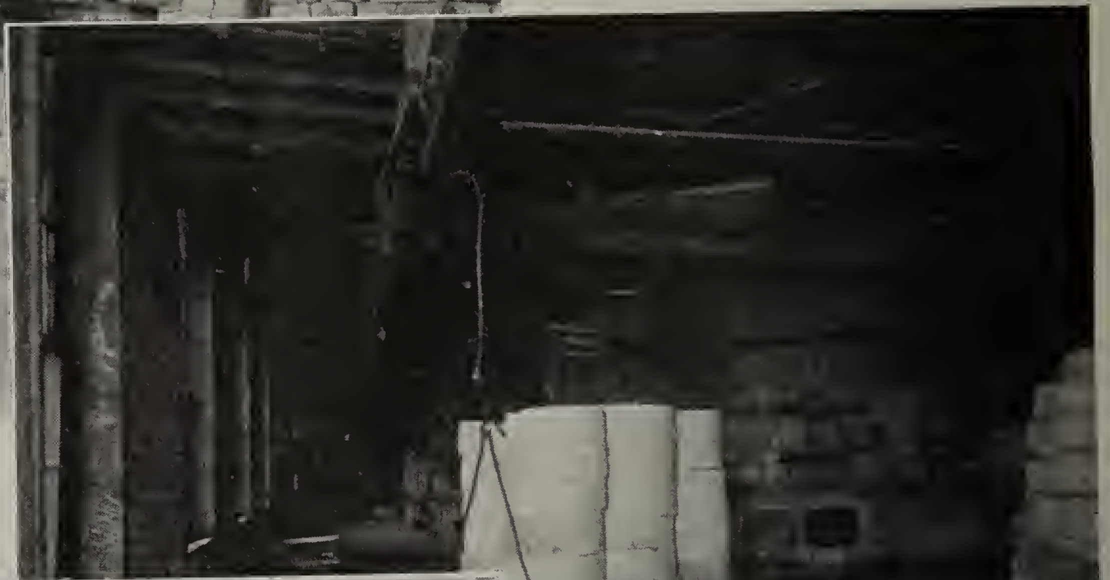
An investigation as to the uses that this equipment has on the above plants reveals that the system is used for hauling coal and distributing it to the furnaces of round down-draft kilns or to the firing holes on top of continuous kilns. It is used for handling ashes, handling clay, conveying green saggers to the kiln, conveying finished saggers to and from kilns, handling scrap ware, transporting finished ware from kiln to warehouse, and so forth.

This article will deal briefly with two installations which are quite typical and on which data was secured.

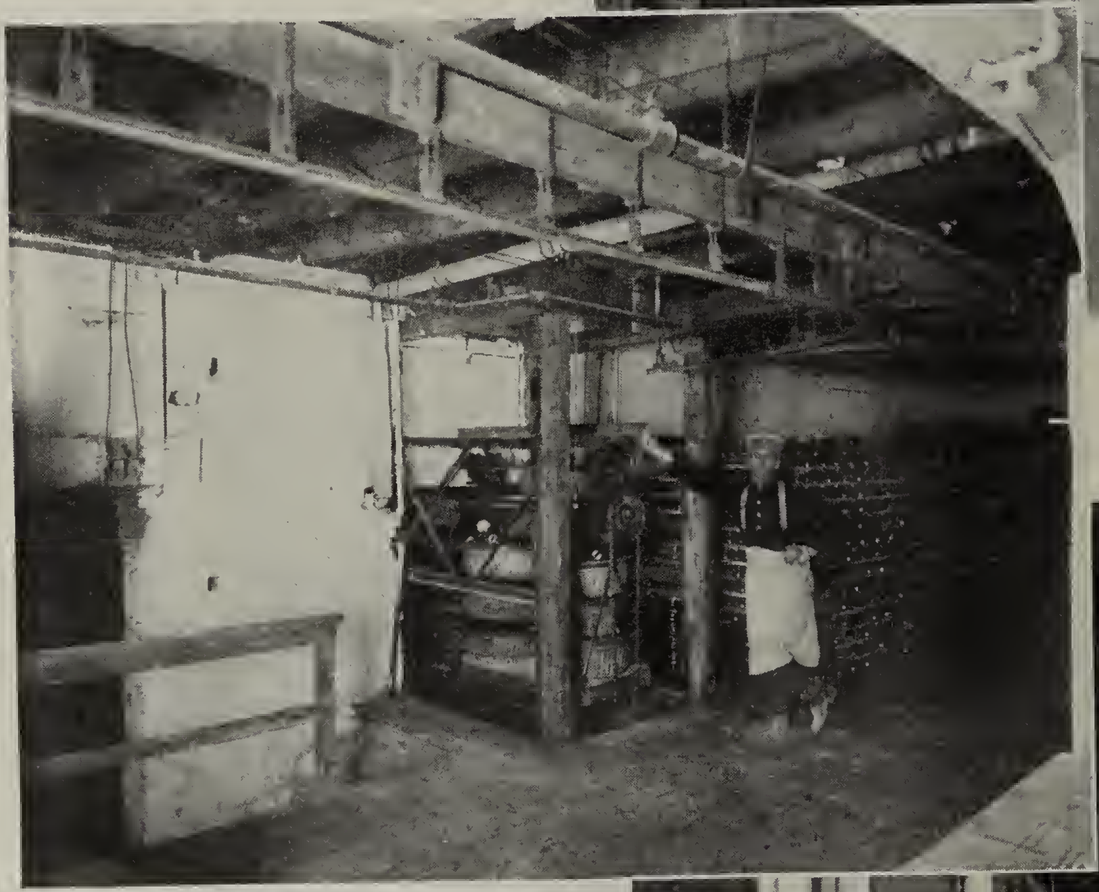
At the plant of the R. Thomas & Sons Co., East Liverpool, Ohio, manufacturers of electrical porcelain, an installation of the monorail conveying system has been in use since the fall of 1920. The equipment was originally installed with the intention of handling coal to the kilns for the firing of the kilns when



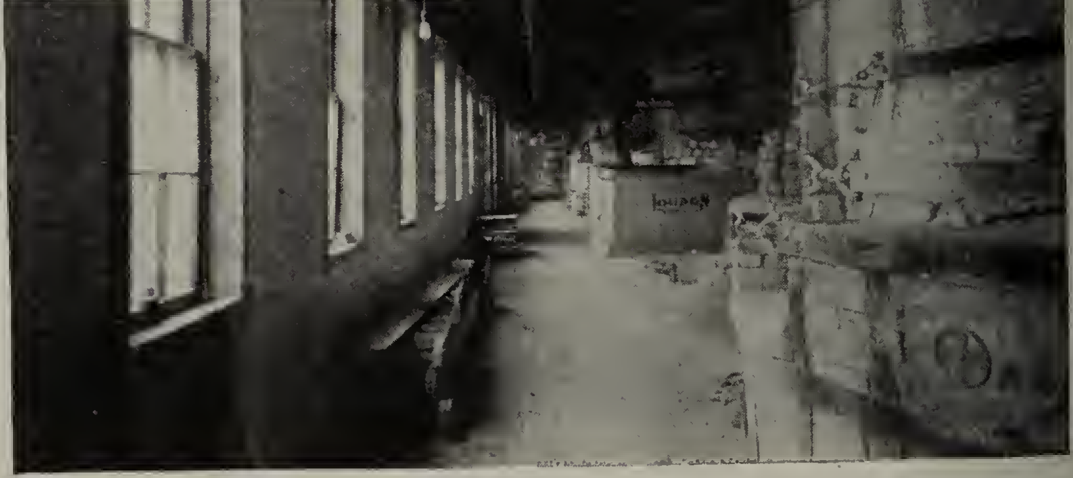
Showing How Conveyor Is Employed to Carry Saggers. Breakage Is Reduced Considerably by This System.



The Method of Unloading a Kiln When the Monorail Conveyor is Employed is Well Illustrated Here. Ware is Taken from Saggers and Placed in Metal Buckets Which Are Transported on the Platform of the Monorail.



Elevator Takes Care of Changes in Ceiling Heights. Monorail Problem Is Easily Solved in This Way.



In This View Is Shown How the Monorail Is Installed Along the Whole Length of the Kiln Room and Switches Enable the Bucket or Platforms to Reach the Sides of the Kiln.

natural gas was not available. The success of the equipment for the above purpose, however, led the concern to extend the use of the equipment for other utilities.

For handling coal on this plant, the coal is obtained from piles outside of the factory and a 40-foot crane, which can be swung in various positions over the coal pile, enables the bucket to have a wide radius and to reach most any part of the coal pile. Twenty-bushel capacity buckets are loaded with coal and these then pushed by a man one at a time to the fire boxes, where the coal is used. This method has saved considerable labor over the old method when the coal was wheeled in by wheelbarrows.

Use 20 Bushel Capacity Buckets

One of the other uses which grew out of the use of the conveyor for this purpose is for bringing green saggers from the dryer to the kilns. Before installing the equipment it required six men five hours a day, or from seven in the morning to practically noon, to carry by hand the green saggers to the kilns. Since installing the conveyor, it has been found possible to do the same work with one man and one boy in about four hours' time. Not only was the time reduced considerably, but the number of saggers broken has been cut down to practically nil as compared to quite an extensive loss from carrying by hand.

Also, before the installation of the conveying system, the burned ware which was taken from the saggers in the kilns and placed in buckets was carried in these buckets placed on the head of a man, who carried it to the testing rooms. Due to the great weight of these buckets, it was difficult to keep men on the job doing this laborious and unpleasant task. With the installation of the conveyor, however, this work was eliminated, and buckets are carried by conveyors to the testing room, permitting better working conditions and more satisfied men.

Reduces Losses Considerably

The ware was also formerly trucked out by wheelbarrow, but with considerable loss due to the jarring and bumping. The use of conveyors reduced these losses to almost nil and saved labor besides expediting the unloading of the kilns. Six buckets of ware are carried on a flat platform suspended from the trolley wheels.

View of Top of Coal Fired Continuous Kiln. Kiln Is Fired from Top and Conveyor Is Used to Bring Fuel Direct to Each Fire Hole. Fuel Box is Disconnected and Placed Upon Platforms. It Will Be Noted That the Conveyor Makes the Work of the Fireman Considerably Easier.

The ware from the kilns is conveyed to testing rooms, where each piece is subjected to a test before sent out to the customer. After receiving electrical tests, the pieces are picked up again and conveyed to the packing room by means of the conveyor. In traveling between these departments, some of the rooms are higher than others, and it is occasionally necessary to change the height of the conveyor, which is done simply by means of an elevator which connects the bucket to any elevation desired.

An example of the use of this monorail conveying system on a heavy clay products plant is given by a description of its use on the Brooklyn (Ind.) Brick Co. plant, where common building and face brick are manufactured.

The Ease with Which Materials Can Be Handled with This 40 Foot Swinging Conveyor-Crane Can Readily Be Imagined. Ordinarily This Crane Is Used to Handle Coal, at the Time This Picture Was Taken, Gas Was Being Used for Firing and the Coal Had Disappeared.

This factory has five up-draft kilns fired by the forced draft system. At one end of the plant is located a Galion coal unloader with a storage hopper. The conveying system runs to the hopper and then in front of all the kilns. A switch enables the buckets to be switched to tracks which run alongside each kiln. Thus the bucket containing coal can be dumped in any desirable place.

The operation is very simple. It simply requires the pushing of a large bucket to the storage hopper, from which coal is fed thru chutes directly into the bucket. The bucket is then pushed in front of the kilns and then switched to whatever track is desirable. The buckets are well balanced and easily dumped by simply releasing a catch which keeps it upright during the period of transportation.

The installation of this monorail conveying system on the Brooklyn Brick Co. plant took the place of two horses which were formerly employed to carry coal to the kiln fire boxes. Moreover, it not only supplanted these horses but eliminated such inconveniences which come when a horse is lame or otherwise incapacitated.

The use of the buckets also speeded up the distribution of the coal and the fuel is not ground up by the horses or the wheels of the cart as formerly. Neither is there the delay due to lumps of coal blocking the progress of the cart between the kilns. The system is regarded as a very necessary part of the plant equipment, and the concern states that they would not be without it.

Other installations could be described, but these are typical examples and show as well as suggest methods of utilizing such a system of conveying. It has been suggested that there may be a possibility of developing this system for kiln unloading.

* * *

A. F. B. A. MOVES OFFICES

Removal of the offices of the American Face Brick Association from its former location 110 S. Dearborn St., Chicago, Ill., has been announced. The new headquarters of the association are in the Peoples Life Building, 130 N. Wells St.

"Clean House and Cooperate!" Pleads Hoover

In Remarkable Address, the Secretary of Commerce Outlines Four Outstanding Things to Be Done Now for Benefit of Business and Welfare of Whole Country

DURING the past ten months, the Department of Commerce has given intensive study to the situation in the construction industry; to the national needs in building and construction; to the manufacture and distribution of materials to construction, to its finance, and to its conditions of labor. We have studied the form of trade organizations and their practices. I have had the advantage of conferences with many hundred leading manufacturers, engineers, architects, contractors and labor leaders.

The department has been systematically cooperative with the industries, endeavoring to give such assistance as the government can properly take in relief of the housing shortage. I believe much has been accomplished.

Three Things That Must Be Done

I have been urged by the leading men in their activities that I should take this occasion to frankly express our conclusions in the matter. This can be done very simply:

First: "Clean House"

First: The practices of some small minority are unendurable. They smear with shame the high standards of American business and labor, they drag in disrepute that vast majority of good men in these vital industries. This situation simply must be cleaned up. The government can catch occasional crooks but the cleaning can be done infinitely better by the decent men in the industry if they will organize to do it. It must be done if we would protect our business and commerce from the steady invasion of regulatory hands of the government. I wish to emphasize again that the vast majority of men in these industries do not engage in these practices but some out of self-defense are forced into them by others.

Second: Eliminate Waste—Cheapen Costs

Second: A great field of service to the industry itself and to the country as a whole lies in the elimination of those great indirect wastes which are beyond the control of any one individual man or concern and can therefore only be accomplished by associated action. And if we would secure the housing and construction now so badly lagging behind our needs, we must cheapen its costs. It can be cheapened at a gain in stability to the industry and still hold high standards of living amongst the vast army of workers in the industry. Efficiency in industry is more important to the nation than the margins of profit or the rates of wages over which we do most of our quarreling.

Third: Cleaner, Better Trade Organization

Third: To accomplish these ends, we need cleaner organization of the trades, not the destruction of trades organization. The initiative of the single individual is the most precious part of our whole economic fabric. But there are limits beyond which if we would make the full field of national efficiency, we must have cooperation between individuals. This is not a limitation of individual initiative; it is an extension of it. The restraint of crooks does not necessitate the restraint of constructive action for better business practices.

In the matter of business and labor practices of the minority, I need not recite the repeated exposures in all directions that have sickened the public during the past twelve months. There are other things that have not yet been exposed. I have no taste for demagogic statements. I do have an aspiration for constructive remedies.

Let us take a single material, lumber. Several leading manufacturers inform me that the time has come when we must have a guarantee against short deliveries and fraudulent alteration of qualities. The product of the honest miller must reach the consumer as the manufacturer wishes his product to reach the consumer. Also, he must have protection from the crooked competitor. Is it not possible for the National Lumber Association to take upon itself the duty of giving a brand to lumber that will show its content and grade? Many commodities are assured as to quantity and grade under the inspection and rules of our voluntary trade associations. If you think it wiser to do so, we could probably secure the enactment of a "Pure Food Law" in all building materials. I would much rather see the trades themselves establish their own standards.

Statistical Work That Associations Can and Ought to Do

We need a cleaning up in the statistical work of the trade associations. Some kinds of this work stand condemned in the courts as a restraint of trade and against public interest, yet other kinds of statistics are in the interest of the public as well as in that of the trades themselves and have not been condemned.

Remove Unjust Restraint Upon Labor

We need in our organized labor a removal of every restraint upon effort. No thinking man wants overlong working hours. What is wanted is the full, complete effort of every man during his working day within the utmost of his ability. We need a further vision in the labor world that the volume of employment is not increased by restriction upon effort. The absolute contrary is the case. There can be no answer to the fundamental fact that the standard of living of all the people is the simple quotient of the commodities and services we produce. The more we cheapen the production of a commodity, the larger the number of people who can obtain it. Restriction upon effort in the building trades simply reserves the better class of buildings and of homes to the better-to-do fraction of our people. At present costs, it is scarcely possible for a worker from his own income to build a new and ample home. We want a nation of home owners. There are more buildings needed and in position to finance themselves than there are skilled workers to build them if we could reduce the costs of building. Any justification of those employers opposed to organized labor would disappear at once if labor used its organization to promote the best effort of its members.

Eliminate Labor Overlapping and Increase Efficiency

Labor has a large field of service in the further elimination of jurisdiction disputes, the removal of all restrictions on effort, the elimination of restrictions on the use of materials. This requirement for full effort applies to those who work in hard collars as well as to those who work in soft collars. The standards of living to a large part of our people are higher than in any other part of the world today, but if we would extend these standards to the remainder of our people, it will be done

(Continued on page 641)

Editor's Note—Address of Herbert Hoover before the National Federation of Construction Industries, Chicago, April 4, 1922.

Repairing Broken Gear Wheel Teeth

Another of the Series of Articles on Standard Practices in the Clay Plant Machine Shop—Explains Various Types of Gears in Use

By G. H. Radebaugh

Asst. Manager Shop Laboratories, Dept. of Mechanical Engineering,
University of Illinois

GEARS used on agricultural machinery are made from steel, cast iron, bronze, brass, malleable iron, rawhide and steel castings. In general practice gears made from malleable iron and steel castings are cast gears. Cast iron is used for cast and machine cut gears. The gears made from steel, bronze, and brass are generally made by machine cutting. Gear cutting is an extremely delicate job, requiring special gear cutting machines which are used for the equal spacing and shaping of the gear teeth. This is the reason for the high cost and the superior quality over the cast gear. The teeth on the cast gear are not formed by a machine, but are cast in the sand.

Cast gears are used very much on clay plant machinery and they serve their purpose admirably well. On most clay machinery it would be out of the question to cut gears. Their cost would be prohibitive. When using gears, power is transmitted without slippage or lost motion.

Gear Types and Sizes

The most familiar gear is the spur gear. The small gear shown in Plate 1, meshing with the spur gear, is called the pinion. This type of gear can be machine cut or cast. Sizes of gears are determined by the size of the teeth. The most common sizes are the 16, 12, 10, 8, 6 and 4 pitch. The number 4 pitch is the larger tooth, the 16 the smaller. A six pitch gear means a gear that is one inch in diameter. For example, if a gear has 60 teeth and the pitch circle measures ten inches in diameter, its diametrical pitch is 60/10-6, and the gear is therefore called a six pitch gear. If it is difficult to actually determine the pitch of a gear and it is necessary to secure this information for replacement order, a very simple plan is to mark out the shape of 6 or 8 teeth on a piece of paper and with this drawing give the number of teeth, the outside diameter, bore of hole, size of keyseat, width of hub of the gear. It is then a very simple matter for the supply house to figure the correct pitch of the gear. The spur gear, as can be seen from Plate I, is used for transmitting power from one panelled shaft to another.

Various Styles of Gears in Use

Bevel gears are designed in many working angles. The sketch of the inside bevel and pinion gear with an axis of angle more than 90 deg. and angle of axis less than 90 deg. and the finished bevel gear shown in Plate I, give some idea of the large range of usefulness. The bevel gear can be applied in the transmission of power from shafts not parallel but lying in the same plane. Bevel gears may be either cut or cast. The mitre gear is a bevel gear in which the shafts are at right angles and the gears have the same number of teeth and the same pitch diameter. Rawhide gears are used to advantage on high speed work; the spur and bevel gears are oftentimes made from rawhide, or some similar material.

Racks are used in several places on clay machinery. The size of racks are determined the same as in the spur gear. One of the most common difficulties with the rack, especially those made from cast iron, is their breaking in two. Ordinarily this is caused by not having the rack firmly and evenly clamped to its position. Severe strains are also placed on the

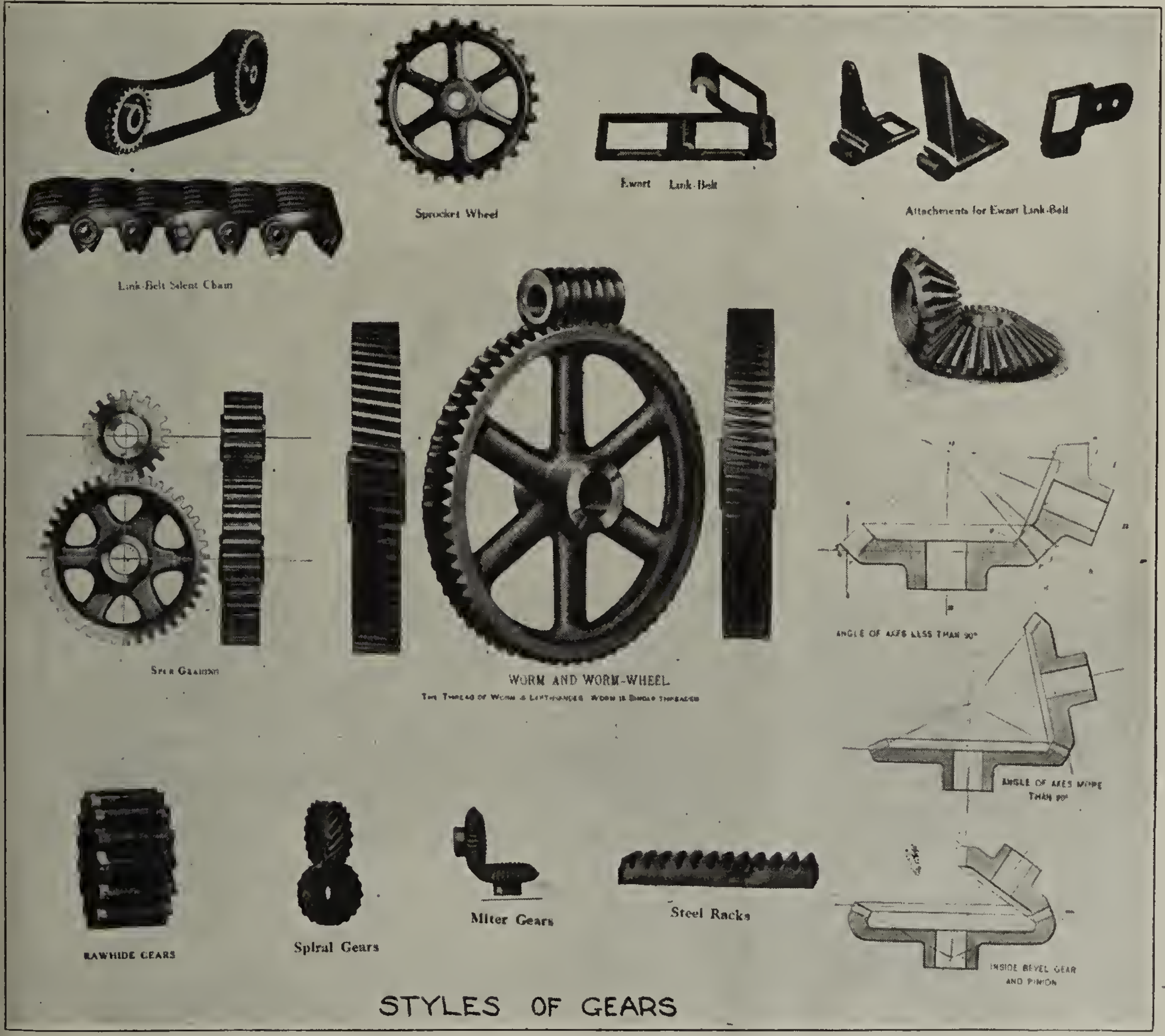
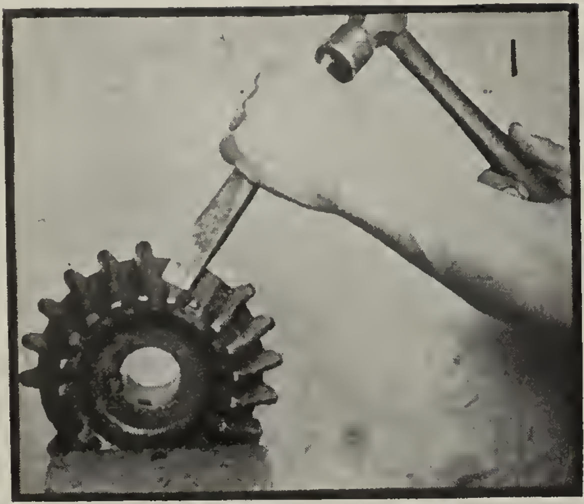
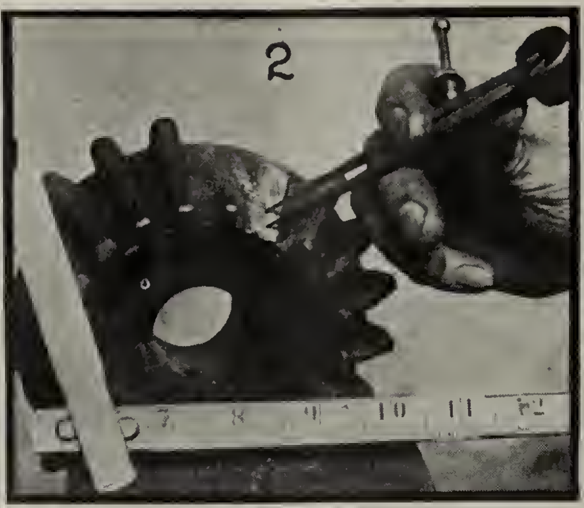
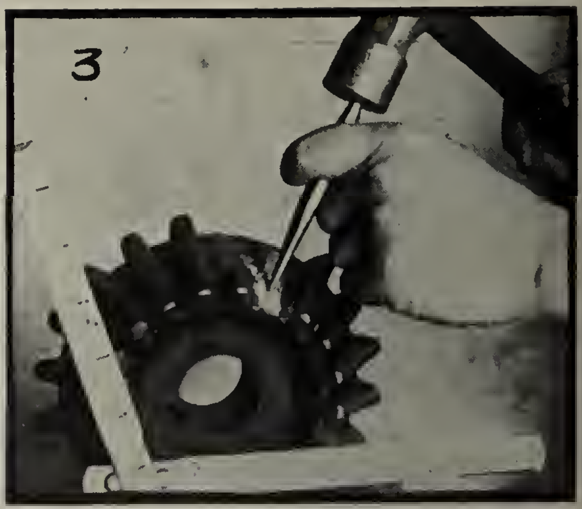

Link-Belt Silent Chain
Sprocket Wheel
Ewart Link-Belt
Attachments for Ewart Link-Belt
Spur Gearing
WORM AND WORM-WHEEL
The Thread of Worm is Lefthanded Worm is Single Threaded
ANGLE OF AXES LESS THAN 90°
ANGLE OF AXES MORE THAN 90°
RAWHIDE GEARS
Spiral Gears
Miter Gears
Steel Racks
INSIDE BEVEL GEAR AND PINION
STYLES OF GEARS

Plate I. Showing Various Styles of Gears and Chains.







rack by permitting quantities of dirt and grit to collect between the teeth.

Worm and Worm Wheel Transmission Gears

The worm and worm wheel transmission gearing is used when it is desired to change small pressure at high speed to high pressure at low speed. The most common use of the worm and worm wheel is in steering gear construction and small electric motor drives. The worm, as a reference to Plate I will show, is simply a screw where threads fit the teeth of the worm wheel. The worm wheel may be a plain spur gear with the teeth cut at an angle or curved to fit the worm. This type is known as hobbed worm wheels or the gashed tooth worm wheel. The shape of these wheels is clearly defined in the plate.

The link belt or silent chain, as shown in Plate I, is used on drives in the power unit of the truck, tractor and auto and on various clay machinery. To get the best service from this type of drive, it is essential that the chain be kept properly lubricated and free from grit and dirt. When a chain becomes stiff and dirty from accumulation, remove from drive by removing pin and bushing, then clean well in a gasoline bath. Cleaning of the chain in a hot bath of water and sal soda is recommended. After cleaning, the chain should then be immersed in a good quality of hot lubricating oil and permitted to soak in this hot bath for a half hour.

Construction of Sprocket Wheel

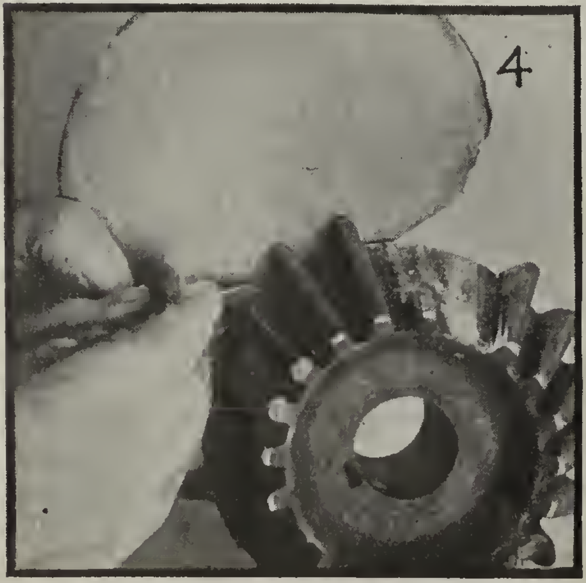
The sprocket wheel is usually made from cast iron, altho some of the small sizes are made from malleable iron. If these sprocket wheels break and it is impossible to get a replacement from the factory when needed, the broken wheel can be used as a pattern from which a new wheel may be cast at a nearby foundry. When fitting a new sprocket wheel on a job, always test the wheel with the chain. This is done by testing the fit of the chain around the entire circumference of the sprocket wheel. Remember the chain is the standard and the wheel must be fitted to it. Some chains are used on sprocket wheels which wear out quickly. Inspect the sprocket wheel and a large or uneven tooth may be discovered which is causing the damage. A large number of special attachment links for sprocket wheel chains are made. Three of these links are shown in Plate I. In this type of chain drive the links are made from malleable iron. When chains become loose in the joints, the hook ends of the link may be closed so it will fit the bar of the link more securely.

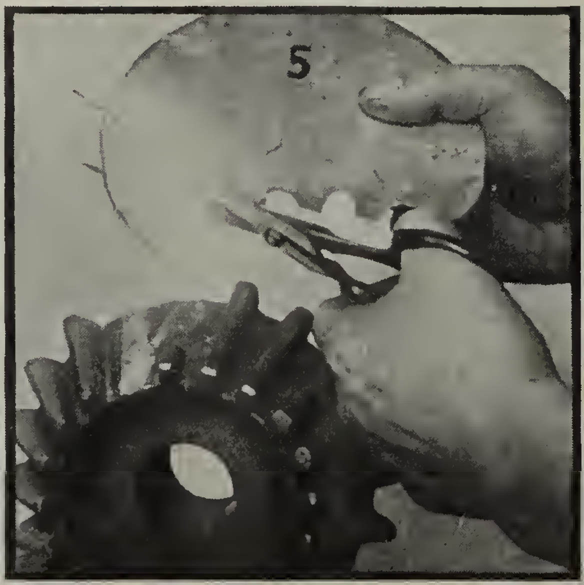
Broken Gear Teeth

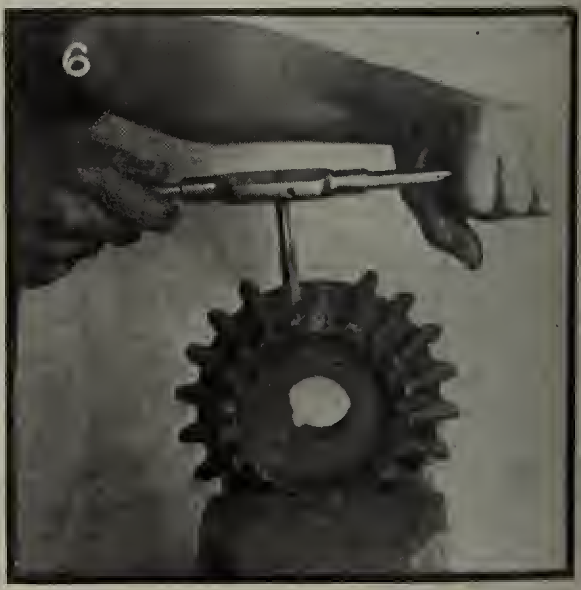
The cast gear made from cast or malleable iron is often damaged because of improper meshing of the gear teeth. Gears should mesh closely to prevent the unnecessary wear of the teeth. This means that the working centers of the gears must be definitely established and maintained. Teeth are broken in gear wheels from overloading of drive and dropping of tools or other objects between the gear teeth. Broken gear teeth can be repaired by four methods. (1) If a tooth broken from the gear is in one piece it can be welded back into place, using the acetylene torch. This would make necessary doing the job in a commercial welding shop. (2) This same type of break can be brazed in the shop forge. (3) A new tooth can be made and dovetailed in the gear. This type of job also must be done in the commercial repair shop. To make this kind of repair a machine tool called a shaper is used to machine the metal to shape. (4) The placing of studs in the spur or bevel gear. This kind of a repair can be made in the clay plant shop. The only tools that are necessary are the drill press and a few hand tools.

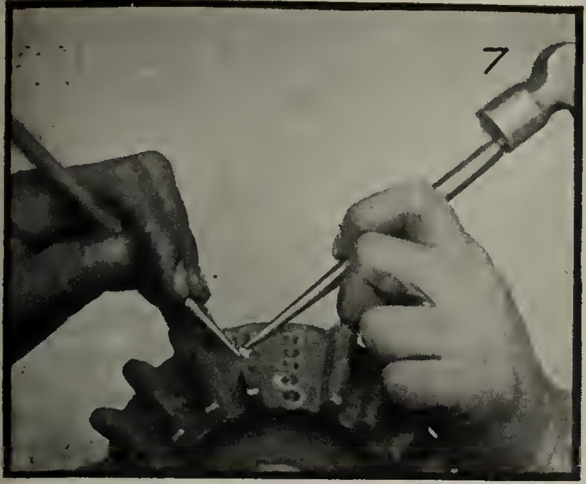
Making the Repair

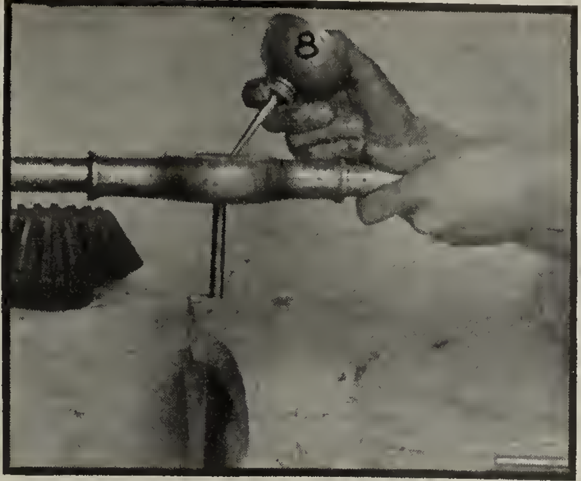
After the gear has been removed from the machine, a very careful inspection should be made to see if other teeth have been broken or cracked. In the job described it was found that grease and dirt had accumulated between the teeth and had become solidly packed. This caused the gear which was in mesh to be crowded away from its proper working depth. The power was then transmitted near the top of the tool, which, in all probability, was the cause of the teeth breaking on the gear. This packed dirt and scale should be removed. The best method is to loosen it up with a screw driver. After this has been re-

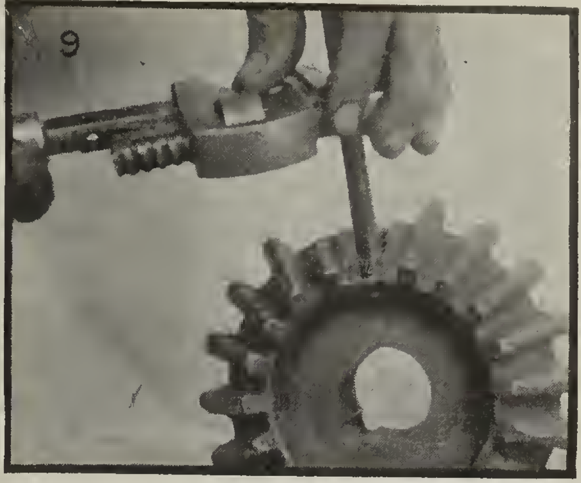












moved, a much better inspection can be made of the remaining teeth.

When gear teeth are worn considerably and teeth are broken from the gear, some consideration should be given to the problem of whether it would be cheaper to secure a new gear or patch up the old one. If the teeth on the gear are not too much worn, it can be used as a pattern to have a gear cast from. In preparing an old gear for a pattern it should be thoroly washed in gasoline, which removes all the grease. The shape of the worn teeth can then be built out to the proper shape by using beeswax.

Shape Teeth from Wood

Teeth that are missing, as in this gear, can be shaped from wood and properly located on the gear. The proper shape of the teeth can be gaged from another gear of the same pitch. The finished pattern can then be taken to a foundry and a casting made from the pattern prepared from the old gear. If it is decided to make the repair in the farm shop by inserting studs, the uneven surface left by the broken tooth must be removed, (Fig. 1.) This can best be done with the flat chisel and the square file. To assist in maintaining the location of the tool, do not file to a clean surface; the outline of the tooth position should be left. Notice in Fig. 2 how this tooth location shows up. In the following operation the layout is gaged by this tooth outline. In deciding what size stud to use, measure the width of the tooth at the pitch line, that is, the widest place on the tooth. The stud would be this size or a little larger.

Making a Lay-out

To obtain a good lay-out, chalk the surface and draw a line down the center of the tooth spot. The dividers are then set to the required distance and the centers located. To secure accurate drilling, center punch on the layout lines, as shown in Fig. 3. It will pay to take time to do a good job of laying out. If the hole centers are correctly located and properly drilled, the shaping of the studs is a much easier job.

To patch a bevel gear is a much more difficult job than the spur gear. In the repairing of either type of gears it is necessary to maintain the proper shape and location of the tooth. This can be done by using the templet made from cardboard or tin. A templet of an extra thin piece of tin, which can be cut easily with ordinary cloth scissors, will do the work well. This kind of tin can be found in lids of paint cans. To secure a very accurate layout of the tooth shape, the templet should be made to cover three or four teeth.

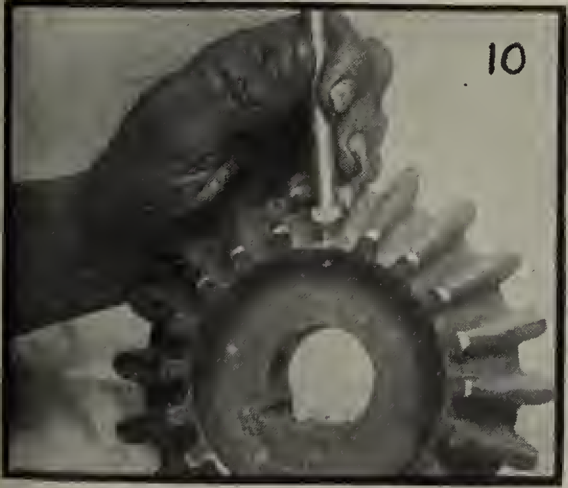
Laying Out the Templet

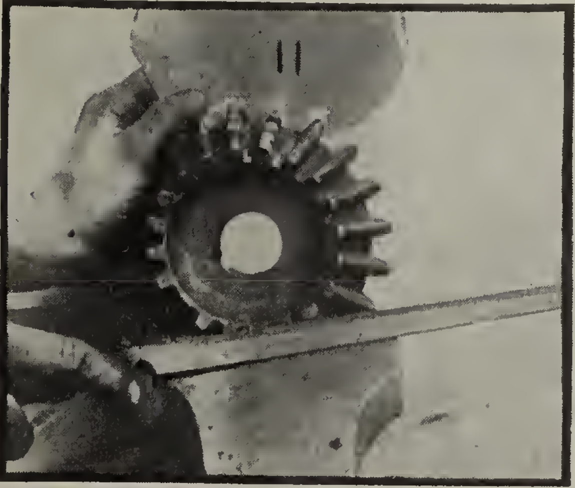
In laying out the templet, as shown in Fig. 4, the outline of the teeth can be transferred to this tin by using the scriber or scratch awl. The templet is cut to required layout as in Fig. 5, care being exercised in following closely the layout line previously made with the scriber. Lines are followed much easier with the scissors than with tinner's snips. This is the reason for using the extra thin tin. The templet is then checked on the good teeth to insure accuracy. When putting in two sets of studs, as called for in this job, they must not only be shaped properly, but should be set the proper distance from the center of one tooth to the center of the next. The templet then must fit not only the shape of one tooth at a time, but must fit on all the teeth. If the templet does not fit accurately, the shape of the teeth layout can be corrected by filing or by trimming with the scissors.

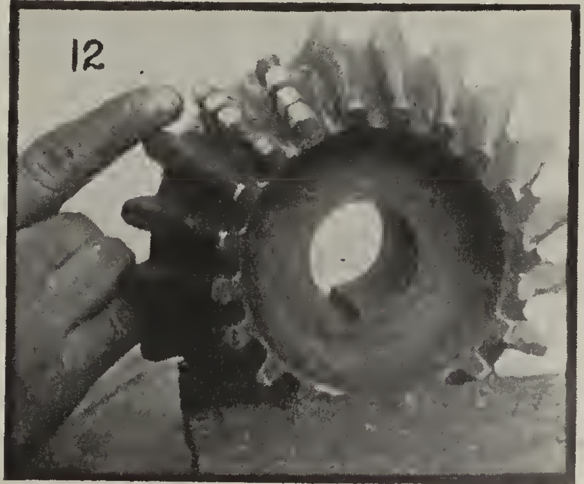
Tapping the Holes

After the templet is completed, the holes are drilled, their location having been previously laid out. In selecting the drill for the tap, be sure that a drill is used which will permit the tap to cut a full thread. In tapping holes of this kind, it is practical to use the complete set of machinist hand taps. Hand taps are made in sets consisting of a taper, plug, and bottom. In Fig. 6 is shown the taper tap in the hole starting to cut the thread. The starting end of this tap is tapered about one-half the length of the tap. The next tap to use would be the plug tap. It is used to tap a hole where it is impossible to run the tap thru the hole. It is tapered for about four threads. The bottom tap, which would follow, has a full thread to the point. This tap is used for bottom tapping. These taps are all of the same diameter. Each tap will cut a full thread. It is commonly supposed that the taps are of different diameters.

Tapping a hole, especially with small size taps, is quite an important operation, as there is always danger of breaking the tap. Taps, if used correctly, should never break in service. When tapping equalize the pull on the wrench. Never turn a







tap with one end of a wrench, as the pull is unequal and an excess strain will be placed on the tap, which will cause it to break. This is one reason that the use of a monkey wrench for tapping is never recommended. A good tap wrench will more than pay for itself. Breaking of taps can be reduced greatly by proper lubrication. For tapping steel or iron use a mixture of ten per cent. graphite and 90 per cent. tallow. Machine oil is an inferior tapping lubricant. For cast iron use lard oil. However, oil has the disadvantage of causing the chips to stick in the tap flutes; this causes the tap to bind and tear the threads. Kerosene is often used when tapping cast iron.

Removing Broken Tap

Removing a tap broken off in a hole is a job requiring considerable skill. In Fig. 7 is shown one of the first methods that should be used to remove the tap. It often happens, however, that this scheme will not loosen the tap and other methods must be found. When trying to remove a broken tap with the two punches, most failures are caused by too strong and unequal blows from the hammer. Extremely light blows delivered at the same time and with equal force generally will remove the stub, that is, if the tap stub is not in pieces. Other methods of removing taps is annealing the tap stub and then removing by drilling. This method involves heating the job and consumes considerable time. Diluted nitric acid in the proportion of about one part acid to five parts water injected into the hole loosens the tap so it usually can be removed readily. The remainder of the acid should be thoroly washed out of the hole, as it will continue to eat the threads. Before reentering a new tap be absolutely sure that none of the broken tap is left in the hole.

Making the Studs

The holes being tapped, they are now ready to receive the studs. Standard screws can be used for these studs, but this is more expensive than making the studs from a piece of round stock. The best way to make a stud so it will fit into the tap hole good and tight is to cut the thread with the die. Start the thread on the end which has been rounded off on the grinding wheel or with a file, with the stock and die in the usual manner. After the thread is started, the die can be turned over as in Fig. 8 and the threads cut to the desired length. This gives a full thread to a shoulder, which, when secured into the hole, will fit snugly the entire length of the thread. Lard oil should be used as a lubricant on a die when cutting steel. To prevent chipping the threads, clean the die by turning counter-clockwise two or three degrees. This causes the chips to break and fall from the die. When making studs from a rod it is a good scheme to saw the stock half in two, making it a little longer than required. This extra stock is left for a finish.

Inserting the Studs

After the sawing operation is completed, the threaded rod is screwed into position, as shown in Fig. 9, and the rod broken from the stud, as in Fig. 10. Whenever possible, that is, if the stud is screwed thru, the end can be riveted over. This makes a much stronger job. The studs can be rusted in place. This can be done by applying to the stud before it is started in the hole a rust cement. By using the cement galvanic action sets in very rapidly and the iron swells, by forming iron oxide, cementing the stud and gear together.

The stud must screw into the job good and tight. A loose fit will not do at all; if the stud fits loosely the die should be adjusted to cut larger. Studs are screwed into all the holes and they are then filed to the shape and position called for by the templet, as shown in Fig. 11. The best file to use on a job of this kind is the half-round bastard file.

If the job checks with the templet, it is ready to be put back in service. Notice the finished job, as shown in Fig. 12. Seven studs were required to make the patch. After the gear is remounted on the shaft and put in mesh with its running mate the drive should be turned over by hand and the job checked to be absolutely sure the studs mesh properly with the gear. If the studs bind, the high spots will be clearly defined by friction marks. These high spots should be filed off before using power.

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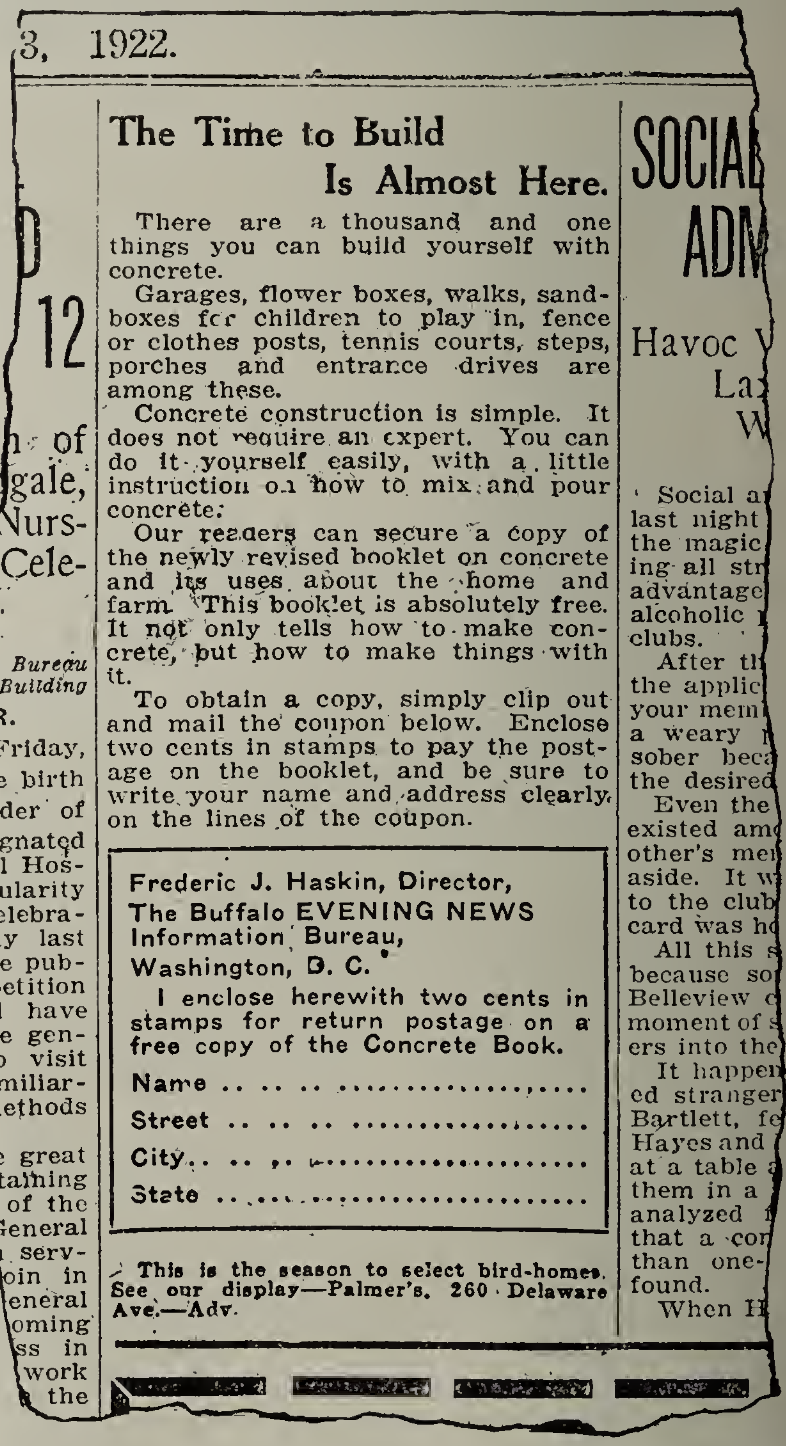
WHERE IS BRICK?

When the clay products manufacturer reads in a daily paper an item such as that shown here it is time to ask himself the question, "Are we on the job?" Certain it is that concrete and the cement people are very much on the job and lose no opportunity to acquaint the public with their product. The item is not an advertisement but appeared in the paper in the form of news and in this form it is extremely valuable advertising to concrete.



3, 1922.

The Time to Build Is Almost Here.

There are a thousand and one things you can build yourself with concrete.

Garages, flower boxes, walks, sandboxes for children to play in, fence or clothes posts, tennis courts, steps, porches and entrance drives are among these.

Concrete construction is simple. It does not require an expert. You can do it yourself easily, with a little instruction on how to mix and pour concrete.

Our readers can secure a copy of the newly revised booklet on concrete and its uses about the home and farm. This booklet is absolutely free. It not only tells how to make concrete, but how to make things with it.

To obtain a copy, simply clip out and mail the coupon below. Enclose two cents in stamps to pay the postage on the booklet, and be sure to write your name and address clearly on the lines of the coupon.

Frederic J. Haskin, Director,
The Buffalo EVENING NEWS
Information Bureau,
Washington, D. C.

I enclose herewith two cents in stamps for return postage on a free copy of the Concrete Book.

Name .. ..
Street .. ..
City.. .. ..
State .. ..

This is the season to select bird-homes. See our display—Palmer's, 260 Delaware Ave.—Adv.

This Item in a Daily Paper Proves Conclusively That Concrete Is Always on the Job.

☙ ☙ ☙

TRAFFIC MEN MEET IN GOTHAM

New York City has been selected as the meeting place of the National Highway Traffic Association, which will hold its annual meeting in that city, at the Automobile Club of America, Friday, May 12, 1922. The afternoon session will be devoted to discussions of reports of the various committees. There will be a dinner at 6 p. m. and for the evening some very interesting papers are scheduled.

The Building Situation

VALUABLE INFORMATION is contained in this department for this issue in the form of the six tables printed below. Figures were specially obtained by Brick and Clay Record from various large cities on the number of permits issued for residences, apartments, industrial and other buildings. Glancing thru the table showing number of permits issued for residences we see that March, 1922, far surpassed the same month of the previous year, indicating that this year will be one of great residential building activity.

Reports from cities in every part of the country bear out predictions made last year that 1922 would surpass other years in the amount of home building. Industrial building is naturally in the background and will undoubtedly remain so for some time. Public buildings, churches, schools and so forth are constituting a large percentage of the total.

12 months of building at the rate at which the industry travelled in March in Chicago, would give the city 32,988 new homes. The total valuation of permits issued in March was $19,333,900, this compares with $7,320,000 in March, 1921. The valuation of permits issued during March is one-sixth of the value of the buildings represented by permits during 1921; it is one-fourth of the 1920 business, and 55 per cent. of the business of 1918. During the first quarter of 1922 permits for new residences and apartments numbered 5,693. There were only 6,487 such permits issued during the entire 12 months of 1920. If building continued at the March rate the total cost would amount to $228,000,000 at the end of the year. Heretofore the record expenditure for buildings of all types in a year was $123,000,000 and the greatest number of permits was 11,409, issued in 1910.

The past fortnight has shown a marked increase in construction operations in the New England district, with actual contracts awarded varying from $6,000,000 to $7,000,000 a week. This rate is expected to continue thruout the spring season. The month of March registered an amount of building of over $20,000,000 in this section, as compared with about $12,000,000 in the corresponding period of a year ago. The last two weeks were particularly heavy, more than $13,000,000 of the total.

Dealers in the Boston market quote on brick as follows:

Common sand-struck, f. o. b. job, Greater Boston, $17 in truckload lots; to contractors, carload lots, $16; New York common, $18 and $18.50, delivered; selected New England common, $21.

Selected water-struck is selling at $35, delivered on the job; new material of the same kind, now coming into the market, is priced at $32. Face brick holds at $50 a thousand, smooth and rough texture. Fire brick shows a sharp decline since the first of the month, boiler No. 1 now selling at $50 a thousand

(*Continued on page* 642)

Number of Permits for Residences

	During Entire Year			During Month	
	1916	1920	1921	March '21	March '22
Atlanta	467	552	1,286	100	218
Detroit	4,266	4,007	2,956	253	403
Philadelphia	7,754	1,296	2,244	138	1,356
Chicago	......	2,058	4,645	525	686
Indianapolis	1,405	615	1,700	152	277
Washington	1,162	677	1,556	87	312
Pittsburgh	......	395	1,005	66	238
Minneapolis	2,526	1,007	2,806	......	......
Houston	......	816	2,084	172	214
Louisville	608	415	602	......	98
Cleveland	4,095	1,825	2,277	218	234
Omaha	833	509	992	96	152
Los Angeles	2,269	9,400	14,954	1,185	1,643

Number of Permits for Apartment Buildings

	During Entire Year			During Month	
	1916	1920	1921	March '21	March '22
Atlanta	29	39	35	7	9
Detroit	4,461	619	917	83	91
Philadelphia	4	9	12	1	2
Chicago	......	103	1,466	74	409
Indianapolis	57	17	44	6	5
Washington	39	15	25	1	6
Minneapolis	202	30	60	......	......
Houston	......	37	40	8	4
Louisville	15	6	11	......	1
Cleveland	339	32	121	15	19
Omaha	20	4	17	....	1
Los Angeles	......	205	602	24	82

Number of Permits for Industrial Buildings

	During Entire Year			During Month	
	1916	1920	1921	March '21	March '22
Atlanta	......	11	6	......	1
Detroit	202	161	62	3	5
Philadelphia	190	184	185	9	33
Chicago	......	1,426	1,306	121	176
Indianapolis	46	61	31	2	......
Minneapolis	247	160	246	......	......
Houston	......	481	467	38	42
Louisville	4	45	20	......	4
Cleveland	349	340	146	22	6
Omaha	47	42	80	8	19
Los Angeles	......	799	1,449	138	192

Number of Permits for Other Buildings

	During Entire Year			During Month	
	1916	1920	1921	March '21	March '22
Atlanta	242	936	903	86	79
Detroit	4,169	9,236	8,211	792	647
Philadelphia	1,268	1,499	2,011	176	252
Chicago	......	83	65	28	56
Indianapolis	1,057	1,659	2,371	280	251
Minneapolis	3,994	5,468	7,014	......	......
Louisville	567	812	1,106	......	130
Cleveland	9,239	2,196	2,544	1,179	955
Omaha	554	804	869	89	94
Los Angeles	......	15,151	20,201	1,554	2,324

Total Number of Permits Issued

	During Entire Year			During Month	
	1916	1920	1921	March '21	March '22
Atlanta	738	1,538	2,230	193	307
Detroit	13,098	14,023	12,146	1,132	1,146
Philadelphia	9,316	2,988	4,452	324	1,643
Chicago	10,277	3,745	7,800	750	1,327
Indianapolis	2,565	2,352	4,146	440	533
Washington	5,856	7,581	9,290	843	1,007
St. Louis	8,550	8,700	11,366	1,079	1,128
Minneapolis	6,969	6,665	10,126	......	......
Houston	1,080	1,334	2,591	218	260
Louisville	1,194	1,278	1,739	......	233
Cleveland	14,022	9,335	12,926	1,434	1,214
Omaha	1,454	1,359	1,958	193	266
Los Angeles	7,565	25,555	37,206	2,911	4,241

Total Valuation of All Permits Issued

	During Entire Year			During Month	
	1916	1920	1921	March 21	March 22
Atlanta	$ 2,876,157	$11,755.254	$ 9,889,450	$ 947,938	$1,992,936
Detroit	46,413,780	61,995,860	46,008,487	4,050,930	4,245,794
Philadelphia	41,550,775	35,755,265	27,438,455	1,533,735	8,092,190
Chicago	112,835,150	79,102,150	125,004,510	7,320,100	19,333,900
Indianapolis	7,252.839	12,493,374	15,535,375	2,078,235	1,841,093
Washington	11,738,121	19,511,928	24,327,434	1,714,284	3,279,544
St. Louis	17,694,078	....	16,631,305	974,405	179,905
Pittsburgh (Residences only)	....	3,829,755	8,244,710	485,500	1,869,394
Minneapolis	22,905,890	15,914,825	23,391,630	....	1,992,275
Houston	3,086,870	7,829.886	9,495,719	652,706	1,226,528
Louisville	3,401,136	6,388,225	6,653,700	....	1,210,150
Cleveland	33,108,255	65,625.050	46,531,323	4,673,675	5,157,590
Omaha	7,226,107	11,407,910	11,386,000	565.810	907,637
Los Angeles	15,036,045	60,023,600	82,761,386	6,915.216	10.964,829

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

HIGH FIRE PORCELAIN GLAZES

SINCE no detailed information was to be had on glazes for high fire porcelain, chemical porcelain, spark plugs, pyrometer tubes, etc., maturing from cones 12 to 16, the following investigation was undertaken:

As originally laid out the field consisted of 35 members with 3, 4, 5, 7, 9, 11, and 13 equivalents of silica, and alumina corresponding to alumina-silica ratios of 1:10, 1:8, 1:6, 1:5, and 1:4. The RO members were constant at 0.7 CaO and 0.3 K_2O. This covered the field with fair uniformity when plotted both by the empirical formula method and by batch weights. Later, to round out the deformation temperature study, 15 additional glazes were made with silica 4, 5, 7, 9, 11, and 13 equivalents with the alumina-silica ratio of 1:12; silica 5, 7, 9, 11, and 13 equivalents with the alumina-silica ratio of 1:15; and silica 7, 9, 11, and 13 equivalents with the alumina-silica ratio of 1:20.

The glazes were weighed out separately in 1 kg batches and ground three hours in small ball mills. The materials used were analyzed and the results given in Table 1.

A small quantity of each glaze was evaporated to dryness and molded into test cones for the deformation temperature determinations, which were made in a small gas furnace. The temperature was raised to 1,100 deg. C. in one hour and from 1,100 deg. C. on at the rate of 50 deg. per hour. The temperature measurements were made with a platinum-rhodium thermocouple and a Leeds-Northrup potentiometer indicator. Five cones were tested at a time, the thermocouple junction being within three-eighths inch of each cone. Uniform temperatures were maintained within the furnace, as shown by Orton cones. Two or more determinations were made on each glaze, checks within five deg. C. being obtained.

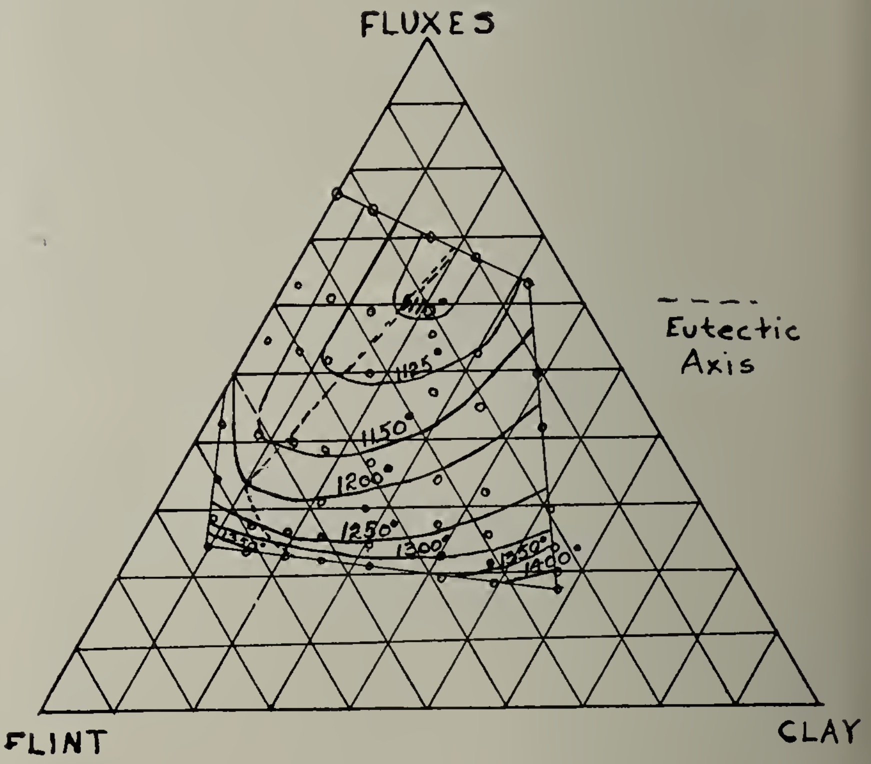


Fig. 2. Deformation Temperatures.

The glazes were applied by dipping on porcelain cups 2½ inches in diameter, 2½ inches deep, and one-eighth inch thick, which had previously been biscuited to cone 08 in a slow oxidizing fire. The composition of the body used was as follows:

North Carolina kaolin	31
Florida kaolin	12
Tennessee ball clay No. 5	5
Flint	34
Feldspar	18

Four glaze burns were made in a gas-fired kiln, to cone 10 in 20 hours, to cone 12 in 20 hours, to cone 14 in 22 hours, and to

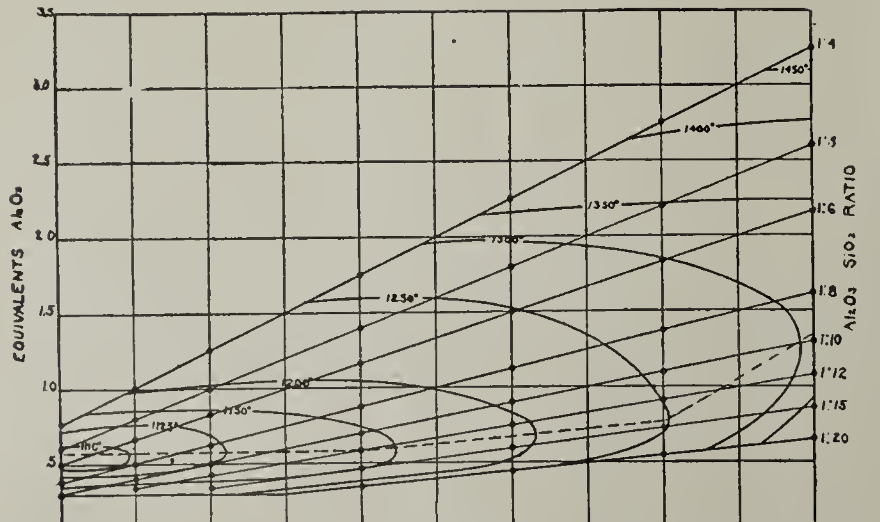


Fig. 1. Deformation Temperatures.

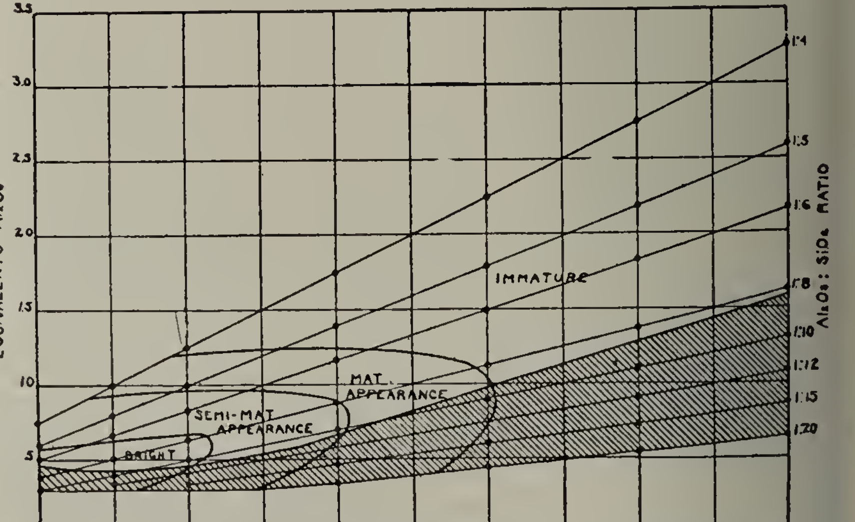


Fig. 3. Porcelain Glazes at Cone 10.

Editor's Note—This treatise was prepared by H. H. Sortwell, assistant ceramic engineer of the U. S. Bureau of Standards.

cone 16 in 24 hours. Reducing conditions were maintained up to cone 8, but from that point on reduction was diminished until the fire was neutral or slightly oxidizing at the finish.

Deformation Temperatures

The silica and alumina equivalents of all glazes and their deformation temperatures are given in Table 2.

The results are plotted for the molecular variations of alumina and silica (Fig. 1) and for the batch weights (Fig. 2), for which the glazes were calculated into percentages of clay, flint, and fluxes (feldspar and whiting in the proportion of 167 feldspar to 70 whiting).

Table 1. Results of Analyses of the Material Used

Components	Flint	North Carolina kaolin	Maine feldspar	Whiting
SiO_2	98.43	41.96	72.85	0.91
Fe_2O_3	.26	.52	.48	.30
Al_2O_3	.80	35.95	15.45	.34
CaO	....	.24	.31	55.02
K_2O	....	....	7.89	....
Na_2O	....	....	2.31	....
MgO	....	....	....	.44
Loss on ignit'n	.14	20.40	.25	43.44
Total	99.63	99.07	99.54	100.45

As shown in Fig. 1, increase in silica to 11 equivalents maintaining the alumina constant has little effect in comparison with alumina in increasing the deformation temperature as the isotherms run in the general direction of the alumina ordinate up to 11 equivalents. Beyond this figure increase in silica has a more pronounced effect on the deformation temperature.

Starting with 0.3 Al_2O_3 and any silica content, increasing the Al_2O_3 lowers the deformation temperature until the eutectic axis is crossed. Further increase in Al_2O_3 raises the deformation temperature.

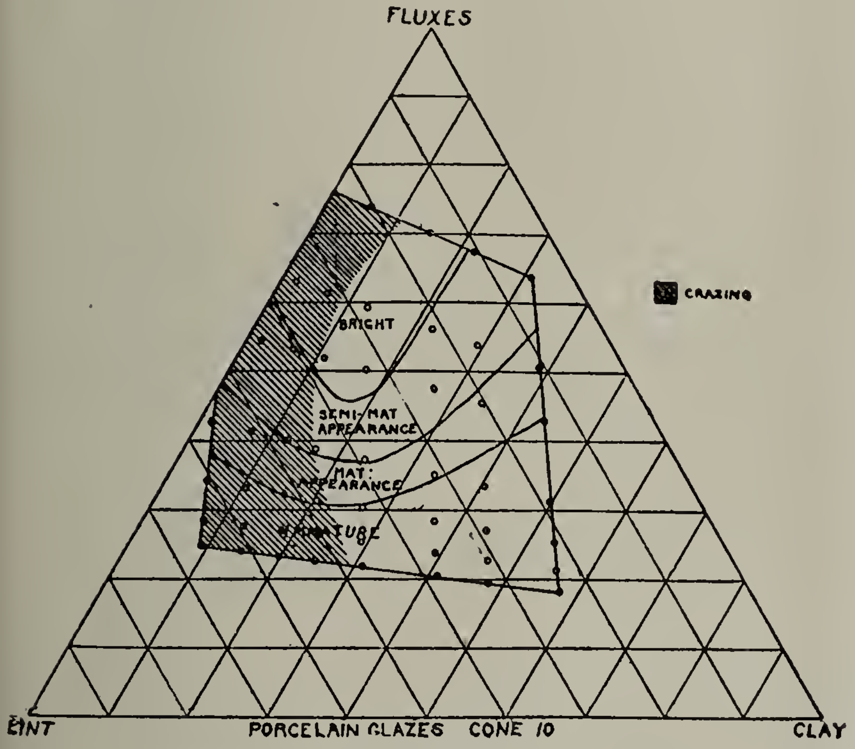


Fig. 4. Porcelain Glazes at Cone 10.

The deformation eutectic axis lies at a slight inclination to the ordinate. As the silica content approaches seven equivalents, this inclination rises, and at 11 equivalents it increases much more.

Examination of Fig. 2 shows that increasing flint does not greatly increase the deformation temperature until the composition approaches 60 per cent. flint. Further increase in flint increases the temperature rapidly.

Starting with zero clay, additions of clay first lower the deformation temperature, after which further increments of clay increase the temperature gradually until 45 per cent. clay is approached. From that point the temperature increase with increments of clay is more abrupt.

Decrease in the flux content (feldspar and whiting) increases the temperature of deformation gradually until it approaches 30 per cent., after which further reductions cause a rapid rise in temperature.

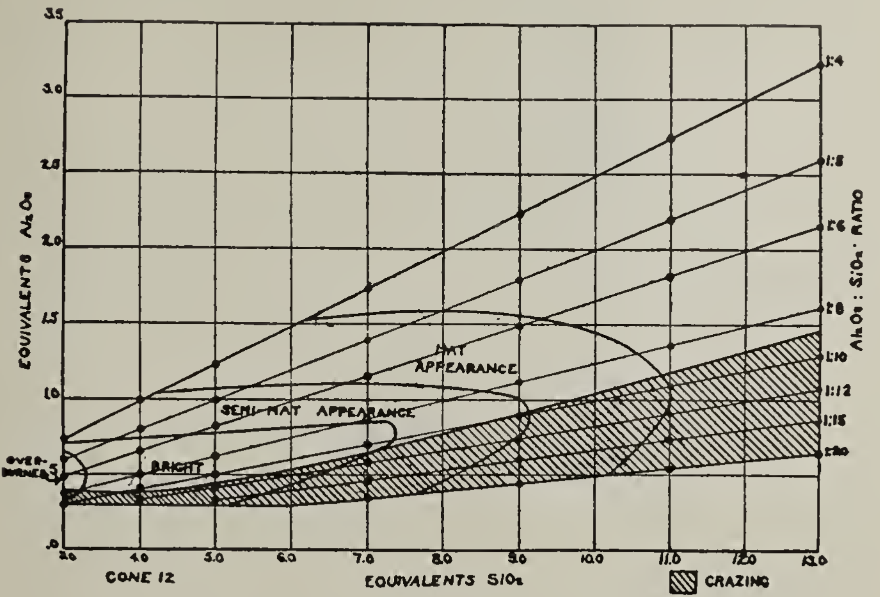


Fig. 5. Porcelain Glazes at Cone 12.

The deformation eutectic axis starts at approximately 20 per cent. clay, ten per cent. flint, and 70 per cent. fluxes, and runs in a straight line to approximately ten per cent. clay, 55 per cent. flint, and 35 per cent. fluxes. At this point the axis deflects to a higher clay content.

Cone 10 Burn

In Figs. 3 and 4 are shown the results of the cone 10 burn. At this heat treatment only a small part of the field is bright and the craze area comparatively large.

It will be noted that there is a belt surrounding the bright area in which the glazes are of semi-mat appearance, and surrounding this are glazes of mat appearance. The latter have the characteristic mat texture due to high alumina, while for the

TABLE 2

No.	Al_2O_3	SiO_2	Al_2O_3: SiO_2	Deformation temperature, °C.	No.	Al_2O_3	SiO_2	Al_2O_3: SiO_2	Deformation temperature, °C.
1	0.300	3.0	1:10	1173	26	1.100	11.0	1:10	1275
2	.375	3.0	1:8	1146	27	1.375	11.0	1:8	1278
3	.500	3.0	1:6	1109	28	1.833	11.0	1:6	1300
4	.600	3.0	1:5	1109	29	2.200	11.0	1:5	1350
5	.750	3.0	1:4	1134	30	2.750	11.0	1:4	1418
6	.400	4.0	1:10	1137	31	1.300	13.0	1:10	1315
7	.500	4.0	1:8	1115	32	1.625	13.0	1:8	1317
8	.666	4.0	1:5	1114	33	2.166	13.0	1:6	1336
9	.800	4.0	1:6	1124	34	2.600	13.0	1:5	1386
10	1.000	4.0	1:4	1210	35	3.250	13.0	1:4	1461
11	.500	5.0	1:10	1124	A_1	.333	4.0	1:12	1175
12	.625	5.0	1:8	1124	A_2	.416	5.0	1:12	1151
13	.833	5.0	1:6	1157	A_3	.583	7.0	1:12	1148
14	1.000	5.0	1:5	1173	A_4	.750	9.0	1:12	1183
15	1.250	5.0	1:4	1223	A_5	.916	11.0	1:12	1252
16	.700	7.0	1:10	1147	A_6	1.083	13.0	1:12	1317
17	.875	7.0	1:8	1159	B_1	.333	5.0	1:15	1169
18	1.166	7.0	1:6	1208	B_2	.466	7.0	1:15	1149
19	1.400	7.0	1:5	1218	B_3	.600	9.0	1:15	1180
20	1.750	7.0	1:4	1292	B_4	.733	11.0	1:15	1230
21	.900	9.0	1:10	1209	B_5	.867	13.0	1:15	1376
22	1.125	9.0	1:8	1224	C_1	.350	7.0	1:20	1207
23	1.500	9.0	1:6	1230	C_2	.450	9.0	1:20	1237
24	1.800	9.0	1:5	1248	C_3	.550	11.0	1:20	1398
25	2.250	9.0	1:4	1370	C_4	.650	13.0	1:20	1410

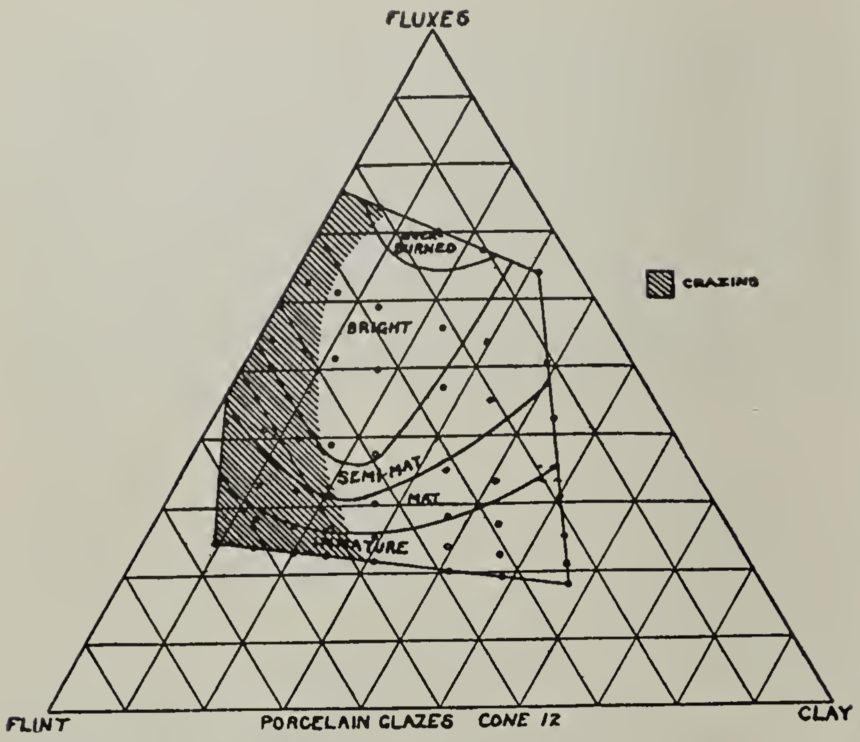


Fig. 6. Porcelain Glazes at Cone 12.

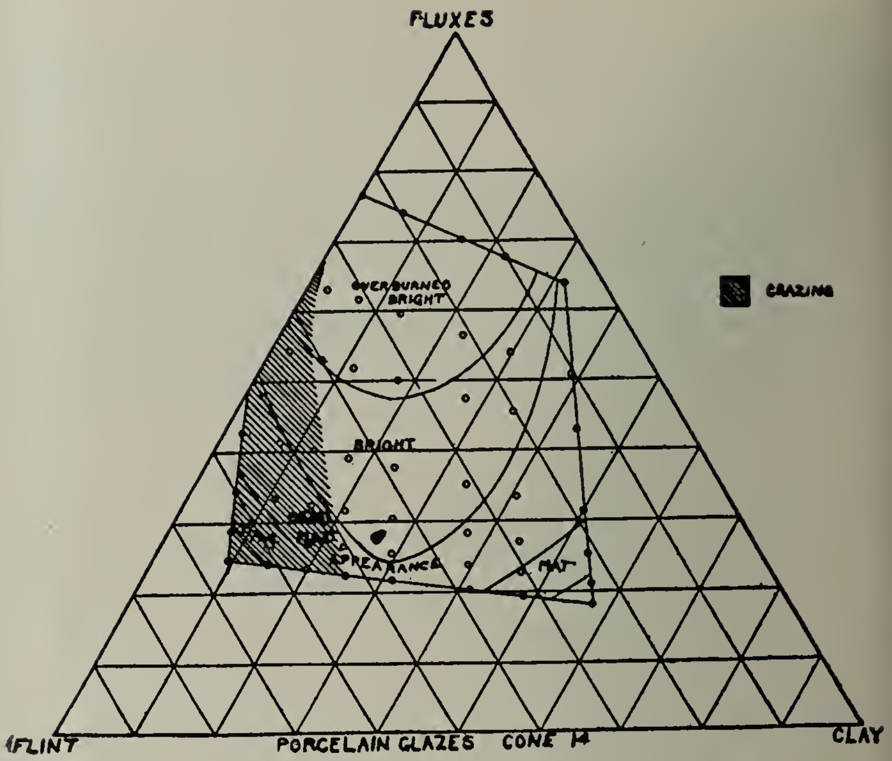


Fig. 8. Porcelain Glazes at Cone 14.

high silica glazes the term mat appearance is used only as a criterion of maturity. Outside of the mat area the glazes are dry and immature.

Fig. 3 shows that the obvious way to correct crazing in this type of glaze is to increase the alumina content by addition of clay.

At cone 12, Figs. 5 and 6, the area of good bright glazes has increased and the crazing area receded as would be expected. Glazes 2, 3, and 4 show signs of overburning, as evidenced by the formation of bubbles, which were not present at cone 10. The semi-mat and mat areas have shifted position in accordance with the change in the area of bright glazes.

Glazes C_1, C_2, C_3, C_4, B_3, B_4, and B_5, which are the high silica glazes of lowest alumina content and the only glazes of 55 per cent. or more flint show signs of segregation at this fire. This evidenced itself by lines on the surface of the glaze similar to watermarks, but rising from the surface instead of being depressions. It appeared as if the fluxes were drawn to the inside of the glaze, leaving a skeleton of flint at the surface. With the contraction of the body in burning, these high flint glazes did not follow, and consequently had to rise from the surface of the body.

Cone 14 Burn

Figs. 7 and 8 show that at cone 14 the area of bright glazes and the area of overburned glazes has increased, the craze area receded still further, and the semi-mat and mat area shifted again.

The softer of the overburned glazes at this temperature were full of bubbles and had run to the bottom of the piece badly.

It was interesting to note that glazes 2 and 3, which were badly overburned and were far out of the craze area at this heat treatment, were crazed. No. 3 had been sound at cones 10 and 12. This seems to be evidence that when this type of glaze is overburned sufficiently, its composition or its physical state is changed enough to cause crazing.

The seven glazes containing 55 per cent. or more flint showed segregation as at cone 12.

At cone 16, Figs. 9 and 10, the area of bright glazes crosses the entire field, the area of overburned glazes is enlarged and the crazing area smaller. The semi-mat and mat areas have shifted in accordance with the change in the bright area.

The glazes which were overburned at cone 14 were not included in the cone 16 burn, so that further observation of the effect of overburning on crazing was not available, as none of the glazes which were overburned at cone 16 but matured at cone 14 had been overburned as much as glazes 2 and 3 at cone 14. The segregation is present in the same glazes at cone 16 as at cone 14.

It is to be noted that altho a great many of these mat glazes are such, due to immaturity, as may be seen by following the charts thru the successive burns, those mats and semi-mats in which the alumina: silica ratio is as high as 1:4 for 3-6 equivalents of silica and as low as 1:6 at 10 equivalents of silica (see Fig. 9) are not mats of immaturity. Glazes 5, 10 and 15, which have lower deformation points than most of the bright

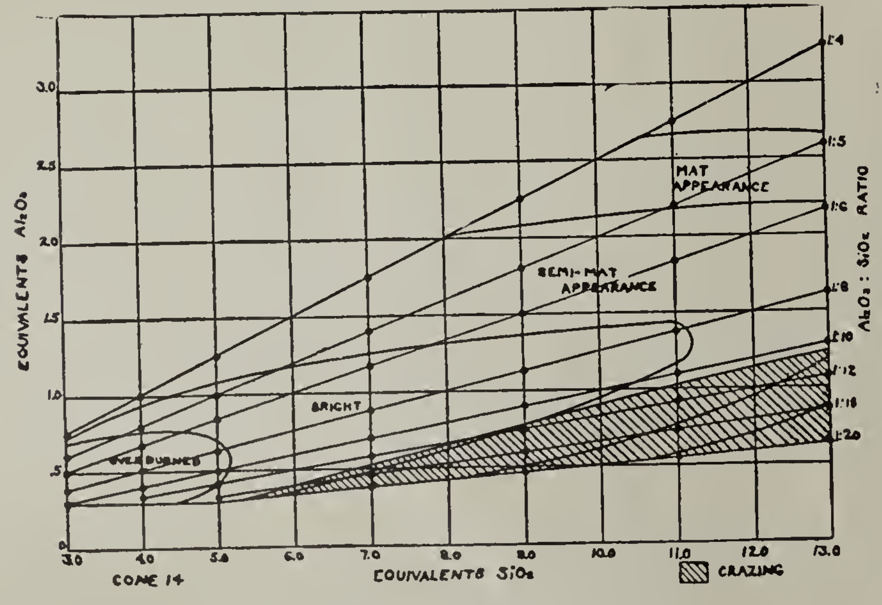


Fig. 7. Porcelain Glazes at Cone 14.

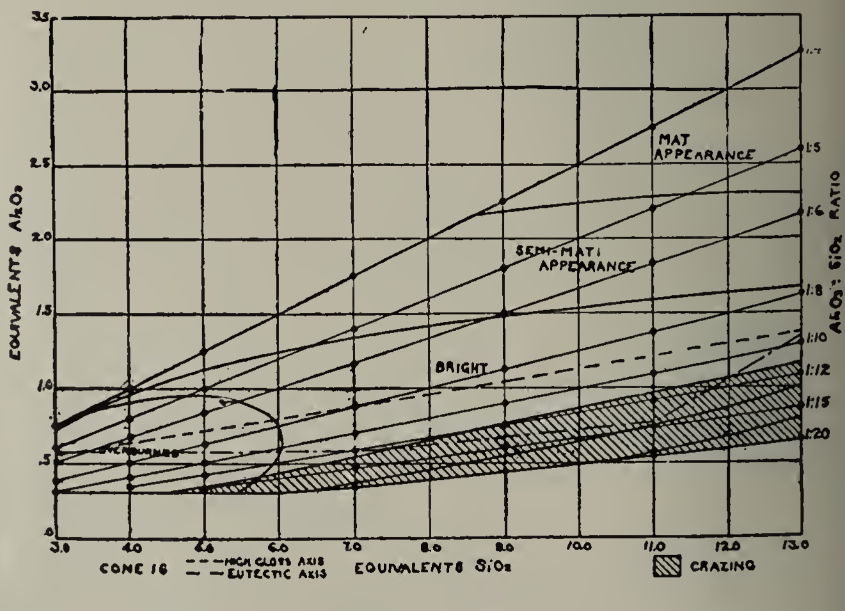


Fig. 9. Porcelain Glazes at Cone 16.

glazes at cone 16, are still semi-mats. Glaze No. 5, with a deformation temperature of 1,134 deg. C. is still a semi-mat at cone 16.

In Fig. 9 the high gloss axis and the deformation eutectic axis are plotted for comparison. Except in the vicinity of 0.3 equivalents silica, the best glazes of a given silica content are higher in alumina and a trifle harder than the most fusible glaze of that silica content. The eutectic axis lies partially in the craze area.

Results of Test

There is a wide range of commercially acceptable bright glazes of this type maturing from cones 12 to 16 having a temperature range of from four to five cones.

The best glazes lie along a high gloss axis which is practically a straight line represented by the approximate formula

$$Al_2O_3=0.3+1/12\ SiO_2$$

The range in silica content for a given temperature is wide and becomes greater as the maturing temperature is raised, the possible variations being between 3 to 13 equivalents of SiO_2. The range in alumina content for a given temperature is very much narrower than the range in silica content.

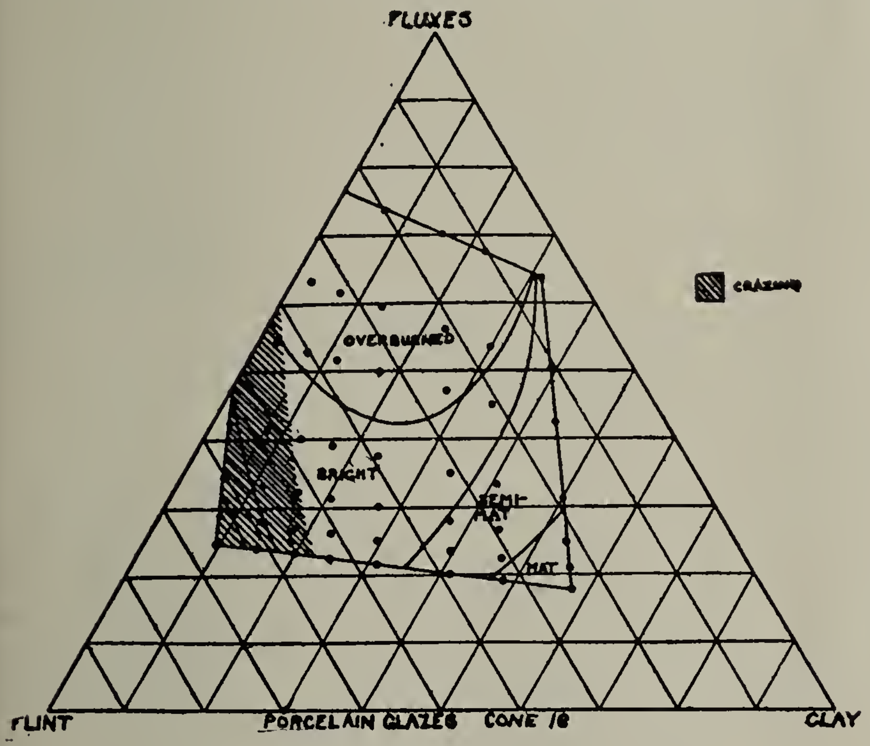


Fig. 10. Porcelain Glazes at Cone 16.

There is a deformation eutectic axis for this series which lies below the high gloss axis and partially in the crazing area.

The best bright glazes for each heat treatment are found at the center of the area of mature good glazes on the chart.

Mat glazes of this type in which the alumina is high enough to give an alumina: silica ratio of 1:4 for three to six equivalents of silica and tapering down to 1:6 for ten equivalents silica are aluminous mats and not mats of immaturity, since increasing heat treatment will not change them to bright glazes.

Glazes of this type containing 55 per cent. or more flint show segregation and will not lie down to smooth surfaces from cones 12 to 16.

The proper way to correct crazing in this type of glaze is by increasing the alumina thru the addition of clay. Higher fire causes the crazing area to recede, but not enough to make higher fire a safe way to correct crazing, except in the glazes containing four or less equivalents of silica. There seems to be evidence that this type of glaze will craze when overburned sufficiently, which might be worthy of further investigation.

Addition of flint to this type of glaze will not stop crazing, but if carried far enough may throw the composition of the glaze into the crazing area.

Acknowledgments are due A. V. Bleininger for advice and suggestions in this work, and to Robert Sherwood for making the bisque.

DISSOLVE MOSAIC ASSOCIATION

The Mosaic Employers' Association of New York, N. Y., has been dissolved as a result of an action brought by the state, holding that operations were in restraint of trade.

* * *

GENERAL CERAMICS REDUCES WAGES

The General Ceramics Co., Keasbey, N. J., has reduced the wage schedule for the kiln gang at its local plant, devoted to the manufacture of chemical stoneware, by five cents an hour.

* * *

CRANE CO. ACQUIRES PLANTS

The Crane Co., manufacturers of porcelain enameled sanitary ware, with headquarters in Chicago, Ill., has closed a deal whereby control of the Cahill Iron Works at Chattanooga, Tenn., is obtained. With the addition, the Crane Co. will be in a position to double its production.

* * *

WILL START WORK SOON

The Dallas (Tex.) Pottery Co. is arranging for the early operation of its new plant at Oak Cliff, near Dallas, now nearing completion. It will be used for the manufacture of art pottery specialties.

* * *

STANDARDIZING SANITARY WARE

The Sanitary Potters' Association, thru its Standardization Committee, reports that these items of sanitary earthenware have been standardized: Washdown Bowls, Reverse Trap Bowls, Stock Syphon Jet Closets, Six-Gallon and Eight-Gallon Tanks, and in standardizing on these five particular articles quite a lot of excess measurements and features have been eliminated which heretofore added to the making price and selling price. Formerly it was simply following the desire of certain jobbers and architects to have something special when erecting a new building. Now that the measurements have been standardized, the association finds that it is working out very successfully.

In reference to the various other eliminations, while the list has been exceedingly large and the cut made by the Standardization Committee very deep, yet it has simplified matters and helped the manufacturer to reduce his stock, both of molds and finished ware, which he was formerly compelled to carry.

* * *

APPLYING LUSTER DECORATIONS

There are two methods by which luster decorations may be applied to pottery, according to a report of the Bureau of Mines Ceramic Experiment Station at Columbus, Ohio. First, by applying in paste condition, suitable metallic salts to the surface of the ware and firing at a dull red heat. Second, by vaporizing such salts in the flame of the kiln in which the ware is placed. The latter method is productive of iridescent effects similar to that of favrile glass.

The ceramic station made an investigation of lusters for pottery decoration for the purpose of determining what glaze compositions were most suitable for taking vapor lusters. The work indicated that glazes containing B_2O_3 and PbO produced the best luster effects. The intensity of the luster increased with larger amounts of these two components in the glaze.

* * *

WASHBURN SPEAKS AT FRANKLIN

Dr. E. W. Washburn, Department of Ceramics, University of Illinois, gave an interesting address on the subject of "Physical Chemistry and Ceramics," illustrated with lantern slides, before the Franklin Institute, Philadelphia, Pa., on the evening of April 6.

The Superintendent

Helpful Hints for Practical Men
Whose Problem is Maximum
Production with Minimum Cost

RELATIVE HEATING VALUES OF FUELS

The following tables are from lectures prepared by Prof. L. P. Breckenridge as part of his fuel conservation work for the Fuel Administration.

TABLE I. RELATIVE HEATING VALUE OF WOOD AND COAL

Kind of Wood	Weight per Cord in lb.	Heating Value B. t. u. per lb.	Equivalent Weight of Coal of 13,500 B.t.u.
Ash	3520	5450	1420
Beech	3250	5400	1300
Birch	2280	5580	1190
Cherry	3140	5420	1260
Chestnut	2350	5400	940
Elm	2350	5400	940
Hemlock	1220	6410	580
Hickory	4500	5400	1800
Maple, hard	3310	5460	1340
Oak, live	3850	5460	1560
Oak, white	3850	5400	1540
Oak, red	3310	5460	1340
Pine, white	1920	6830	970
Pine, yellow	2130	6660	1050
Poplar	2130	6660	1050
Spruce	1920	6830	970
Walnut	3310	5460	1340
Willow	1920	6830	970

TABLE II. APPROXIMATE HEATING VALUES OF DIFFERENT COALS

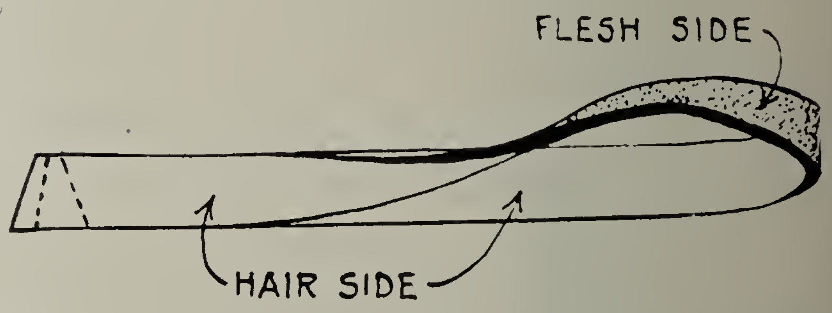
Fuel	Heating Values B.t.u. per Pound (varies)
Wood (dry)	5,500-7,500
Peat (air-dried)	about 7,500
Lignite	5,200-7,500
Bituminous coal	9,500-14,500
Anthracite	11,500-14,000
Straw	about 5,100
Corn	7,200-8,200
Tanbark (dry)	about 6,100
Hydrogen	62,000
Crude oil	17,500-21,000
Kerosene	0.863 sp. g.-18,700
Gasoline	0.710 sp. g.-18,500
Natural gas	About 850 per cu. ft.
Producer gas	About 125 per cu. ft.
Blast-furnace gas	About 95 per cu. ft.

KINKS FOR CUTTING BELTS

Several years ago the writer was taught a valuable kink for cutting belts, as illustrated in the sketch herewith.

We are usually instructed, when cutting a belt, to use a square and make the cut "absolutely square" with the sides of the belt. However, if done in the manner illustrated here it is not necessary to make the cut square. The important thing is to simply make the cut "straight."

This is done by giving the belt one turn as shown in the sketch and laying the ends one exactly over the other, both in perfect alignment. Then, by making the cut "straight" even tho not square with the sides, it will be found that the ends will make a perfect fit. The cut may make an angle of 45 degrees or even more with the sides. It makes no difference.



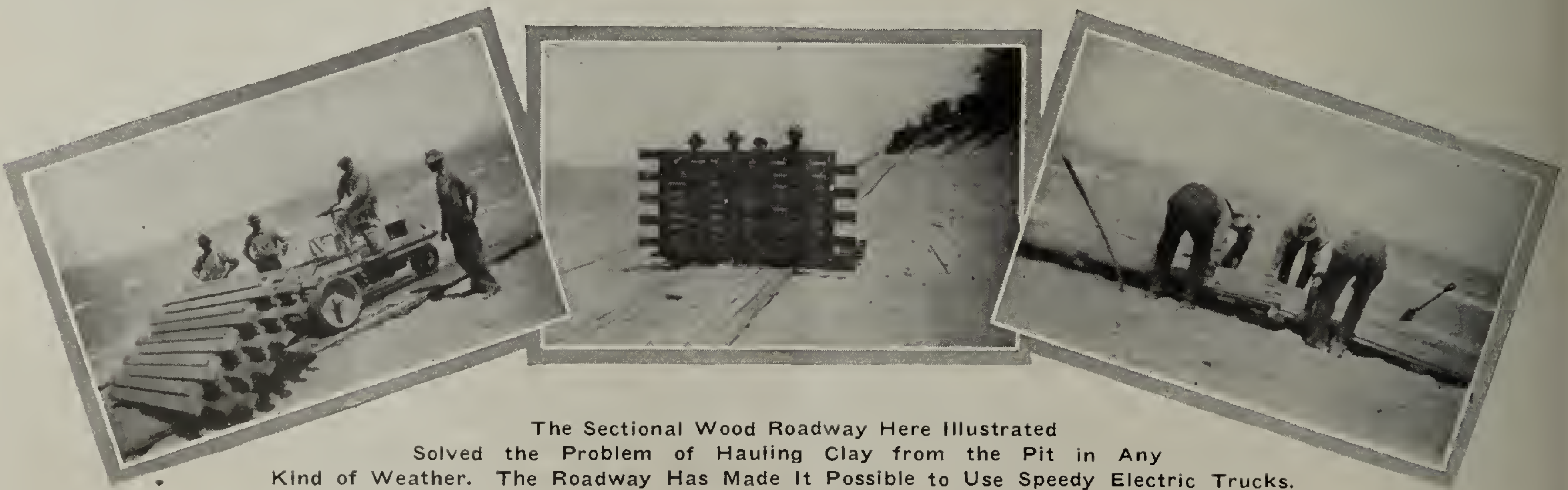
Good Way to Insure Correct Fit of the Ends When Cutting a Belt.

Of course, it is usually best to cut the belt square, or as nearly square as possible. By cutting it square belting material is more likely to be saved than where the cut is made at an angle. But to be doubly sure, even if a square is used, it is a good plan to give the belt one turn as explained here and then if the square itself is not true, or if an error has been made in some way or other, the cut will automatically rectify itself.—By W. F. Schaphorst.

* * *

BUILDS PLANK ROADWAY TO PIT

Finding themselves up against a problem of interrupted production due to bad roads from pit to plant the Risclay Brick Co., Michigan City, Ind., solved the problem in an interesting way. In hauling clay from the pit, this company formerly used two-



The Sectional Wood Roadway Here Illustrated Solved the Problem of Hauling Clay from the Pit in Any Kind of Weather. The Roadway Has Made It Possible to Use Speedy Electric Trucks.

wheel carts drawn by horses. Later these carts were converted so they could be drawn by a tractor. The company's bugbear, however, was wet weather during which the road became so bad that they, the tractors, could not be operated over them and the plant was of necessity shut down during these periods. It was finally suggested to the company that a replaceable and easily moveable plank roadway be built. This idea was adopted and a roadway built as shown in the illustration. This roadway is five feet wide and comes in ten foot lengths. There is no necessity for nailing the sections together as the joints overlap and fit into one another and as a consequence lie perfectly even when in position.

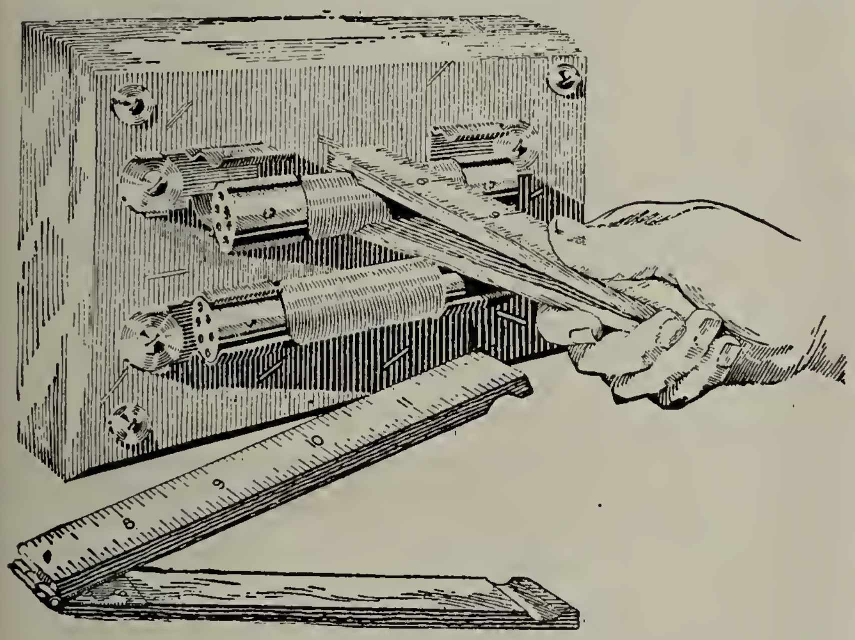
After building this roadway the Risclay Brick Co. purchased two Clark tructractors equipped with automatic gravity end dump bodies to do the work for which they formerly used the two-wheel dump carts. The company is now able to bring clay from the pit in all kinds of weather as long as the snow is shoveled off the roadway in winter. In the event that clay is dropped on the roadway, it can easily be removed or washed off with a hose, so traction is insured at all times.

The cost of installing the roadway amounted to between $.40 and $.50 per lineal foot laid down ready for operation. The road has been in operation for three months and has cost nothing for repairs. The grade from the pit to the crusher is about ten per cent., the distance about 1,000 feet and the tructractors cover the distance in less than 1½ minutes.

* * *

A SAFE, HANDY FUSE PULLER

The figure shows a simple yet handy way to make a small cartridge-fuse puller from a couple of legs of an old boxwood rule. The section of the rule is closed together and a hole drilled thru the ends to take the fuse. The figure readily conveys the idea.—*Charles H. Willey in Power.*

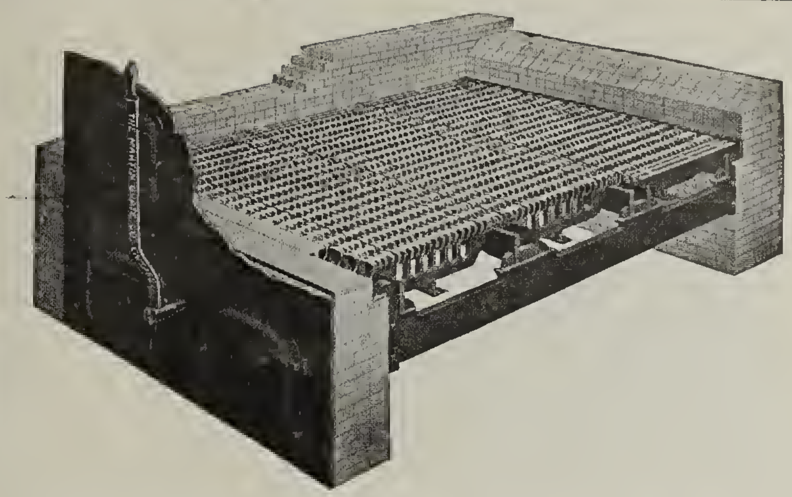


No Danger of Being "Shocked" with This Device.

* * *

MARYLAND CLAYS TO BE STUDIED

The Commercial Club, Frostburg, Md., is arranging with the Bureau of Mines, Washington, D. C., for an investigation of clays in Western Allegheny County, and the various uses to which they may be placed satisfactorily in the manufacture of different products. For many years, the clays mined in this district have been employed for brick manufacture, as well as for hollow tile production, and it is believed that with the great variety of such raw material in this district, that other commercial utility will be found. The close proximity of fine coal properties in this same district is also a point of decided value in connection with the proposed plan to enlarge the burned clay product industry in the country.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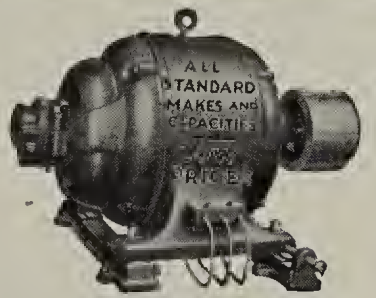

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Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

STANDARD SIZE OF BRICK

1,038. *Iowa—Is it not true that there are a great many different sizes of face and common brick?*

If we remember correctly, you published at one time in the past, a standard size that was adopted by the National Brick Manufacturers' Association.

We find that our brick are larger than some in the market, but do not want to cut down on the size unless we are above the established standard size. Will you kindly inform us at once of the dimensions of a standard size common and face brick.

There formerly was a great variance in the size of face and common brick. However, due to the activities of the American Face Brick Association and the Common Brick Manufacturers' Association in the standardization of brick, and due to the present interest of the U. S. Department of Commerce to standardize sizes and materials, both associations have adopted the same size of brick as a standard, which is 2¼x3¾x8 inches.

There are many advantages in making this standard size brick, most of which are obvious to you. It enables better comparison, in competition, the brick can be laid up better in a wall when used with face brick, and the architect always favors standard size brick it permits him to figure accurately the number required, and he will be inclined to recommend the manufacturer who makes standard brick.

⁂

TROUBLED WITH WARPING

1,040. *Louisiana—We manufacture a side-cut stiff mud brick with a side-cut union machine and automatic cutter. The cutter cuts the brick straight but they warp in drying. When they dry and are laid on a flat surface the warp will equal about ⅛ of an inch. We use a very plastic clay. Altho we have used a short clay of peculiar consistency, that is, seeming to contain no sandy qualities, the same warp would occur in about the same degree. We have tried extending the die from the auger. This reduced lamination but did not help the warp.*

It seems, mechanically speaking, that the outside of the clay column has a tendency to flow faster than the part in the center. We figure this is the cause, for the dry brick are convex on side next to die and are concave on side away from die.

The auger of our machine is 11½ inches in diameter at end being a small machine with little taper. The die at the opening measures 8¼x3⅞ inches. At rear the die is about one inch larger each way.

We have been investigating your trouble, but have been unable to obtain much information for you up to date. However, it seems that the diameter of your auger is too large for the size of your die. An auger delivers the clay on the line with its outside circle, and as your clay is plastic and the auger is close to the die, we believe that this is the cause of your trouble.

We will look into your proposition more fully, but in the meantime would suggest that you try some kind of a baffle around the corner of your die, in order to reduce the speed of the clay in that part. This may assist you, and if you would write us after trying an experiment of this kind, telling us of the results, we might be able to advise you further.

If any of the readers of Brick and Clay Record have suggestions to offer we would be glad to forward them.

* * *

HEAT VALUES OF WOOD AND COAL

1,039. *Tennessee—Kindly give me the relative heat units contained in Western Kentucky coal, gas house coke and hickory wood, to be used for brick burning in up-draft kilns.*

The heat values for different seams of Western coal together with the general analysis of these coals, are given below.

Seam	Counties	General Analysis	
12	Hopkins	Moisture	4.65
	Webster	Volatile matter	38.85
		Fixed carbon	52.65
		Ash	10.85
		Sulphur	1.58
		B.t.u.	12,500
11 (Herrin)	Webster	M.	7.20
	Hopkins	Vol. M.	36.90
	Union	F.C.	45.50
	Ohio	Ash	10.50
		S.	4.05
		B.t.u.	11,900
9 (Springfield)	Muhlenberg	M.	8.65
	Henderson	Vol. M.	35.05
	Ohio	F.C.	46.75
	Union	Ash	9.55
	Webster	S.	3.30
	Hopkins	B.t.u.	11,900
	McLean		
	Daviess		
Nebo Seam			
	Hopkins	M.	8.70
	Henderson	Vol. M.	35.30
		F.C.	47.00
		Ash	9.00
		S.	2.90
		B.t.u.	11,900
Manington Seam (Also Empire Seam)	Christian	M.	10.80
		Vol. M.	35.30
		F.C.	49.70
		Ash	3.80
		S.	1.85
		B.t.u.	12,400

The heat units in gas house coke vary from 12,800 to 13,000 B.t.u. per pound.

Air-dried hickory wood has a heat value of approximately 5,800 B.t.u. per pound.

Average Weight of Air-Dried Cord-Wood and its Equivalent Weight in Coal.

Kind	Pounds per Cord	Pounds of Coal
Shell-bark hickory	4,470	1,987
White oak	3,821	1,700
Red-heart hickory	3,705	1,646
Beach, red and black oak	3,250	1,444
Southern pine (pitch pine)	3,375	1,500
Maple	2,878	1,279
Virginia pine	2,690	1,151
Spruce and New Jersey pine	2,137	949

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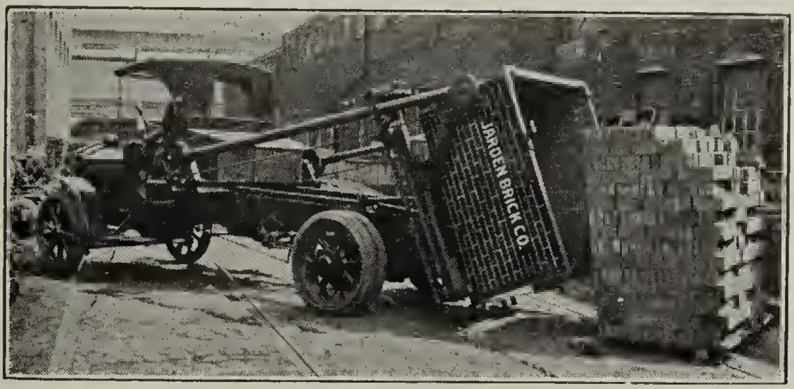

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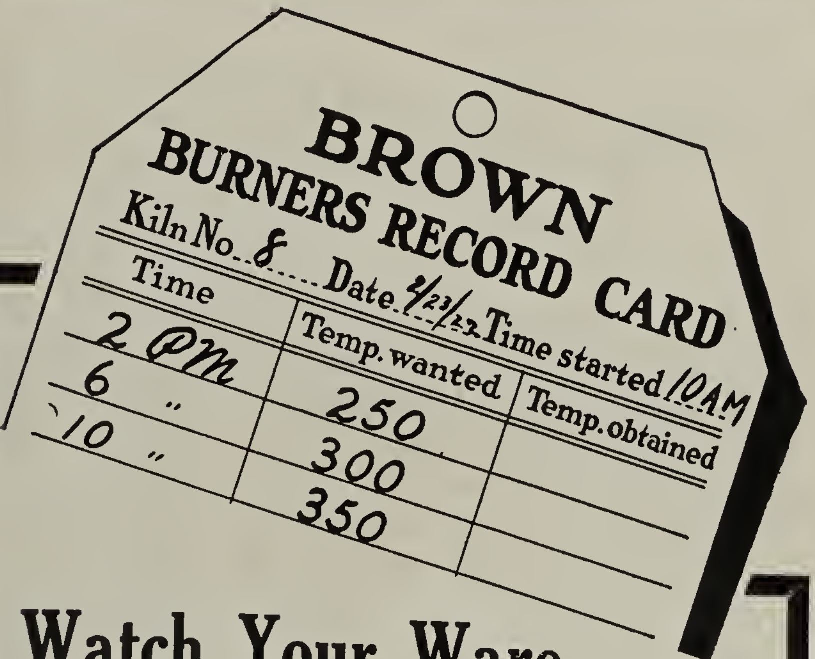

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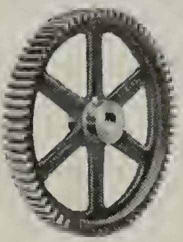

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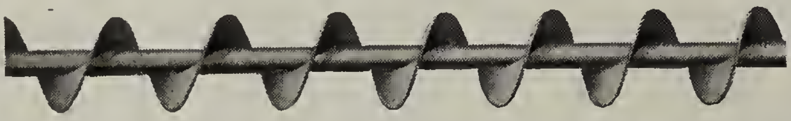

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The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

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FIGURING COSTS OF BRICK MAKING

In one of the recent issues of Brick and Clay Record, in this department, was printed a letter received from a brick manufacturer in Louisiana describing the operation of his plant. This manufacturer described his costs which revealed the fact that he had failed to take into consideration such items as overhead, depreciation, interest on investment, and so forth. In reply to this letter we received a communication from a clay product manufaturer in Arkansas calling attention to these discrepancies in the Louisiana man's cost figures.

The first letter is reprinted herewith:

"We have a 40,000 capacity stiff mud factory manufacturing a durable dark red brick. (I am sending you samples by parcel post.) We have Chambers Bros. machinery in the plant and are using an end cutting machine. Our yard is a very old-fashioned one and our methods also. We get our clay from the banks of the Mississippi River and have to haul this dirt over the levee to the mill in carts, using about seven carts with drivers and mules. We also use the old method of trucking our brick to the dry sheds, using seven men to truck and two to rack. Our clay requires about ten days natural drying before we can place the brick into the kiln.

"When the green brick are dry enough to set, we use six men rolling and two setters giving them task work and getting very good results. After closing the kilns we begin water-smoking with wood for about 96 hours, and having an oil burning system we connect our burners after cleaning out and firing once more with wood, and then turn the steam and oil on.

"I wish to say that this oil burning system is the thing. We use one man to operate 36 burners, having 18 arches. Oil burning renders the work so much easier for the burner that one man can fire with more ease than six can fire with wood. Oil is now costing us $1.85 per barrel delivered here.

"Our brick show a nice settlement after about 72 hours burning with oil and then we continue until the brick are thru burning and settling, and I want to say that we get an even settling and a most uniform burn. We can preserve the arches very well by burning oil, as we can control the heat so much better than with wood.

"We find that there is a great deal of waste heat in the updraft kilns and were thinking possibly of utilizing this waste heat in drying a kiln of green brick with a scheme we have in view. The waste heat from the kiln then would eliminate the water-smoking to a certain extent and thus create a great saving.

"It requires about eight days for the brick to cool off and then we take our entrance wall down and begin to haul them to the cars.

"Brick are now costing us $6.55 per thousand loaded on the cars. I believe that we are getting off reasonably cheap with the old-fashioned method. The $6.55 is arrived at as follows: fuel cost per thousand brick, $3.15, including the cost of wood and oil; labor, $3.05 per thousand, and mule feed $.35 per thousand."

The comment on this letter is as follows:

"Brick making is a hard game once more.

"In your last issue I noticed an item from a Louisiana brick maker who says his brick cost him $6.55 per M. to manufacture. I judge he is seeking information to see if he is anywhere near the mark. Well, if labor, fuel and team hire was all that went into the cost of manufacturing a brick he would probably be correct, but as it is he is considerably off in his cost.

"Won't you please write him that it costs $.75 per M for depreciation; $.75 interest on investment; $.60 for repairs: various expenses called 'expense accounts' $.60 per M; lubricating oils, waste, taxes, stationery and advertising, bad debts, and a few other items $.45 per M. If our friend, and I feel sure he is or will be, our friend, will take careful account of all the items, he will find that fuel, labor and mules cost only about two-thirds as much as his total cost. So I suspect that he will have to raise his price, for right now some Louisiana plants are selling their brick for less than it costs them to produce.

"If it is at all possible I believe Brick and Clay Record could do the average brick makers a real service by persuading them to be really thoughtful about what it costs to make their brick and if it would work out a real system of bookkeeping that would be simple and easily kept and that would show us more than we now know.

"Recently I had occasion to look over the National Hotel Men's system (I believe it is being used by most hotels today) and it looks so simple that I think a ten year old boy could keep those books.

"Forty-five other businesses are also keeping their books along the same lines, but I have not yet seen the system in use on any brick plants."

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

J. O. FREEMAN DIES

James O. Freeman, for many years manager of the Monarch Sewer Pipe Co., in Brazil, Ind., died recently at his home in Aledo, Ill., following a surgical operation performed at Rochester, Minn.

W. D. BRICKELL OPERATED ON TWICE

W. D. Brickell, president and treasurer of the Iron Clay Brick Co., Columbus, Ohio, is in Lakeside Hospital, Cleveland, recovering from the effects of two rather serious operations. The operations were performed by Dr. George Crile, well known surgeon. Mr. Brickell is recovering nicely and will probably take an extended trip before returning to his home.

J. W. TYNDALL RUNNING FOR CONGRESS

John W. Tyndall, of the Krick-Tyndall Co., tile manufacturers at Decatur, Ind., is a candidate for the Democratic nomination of Congressman from the Eighth District. Mr. Tyndall is a former member of the Indiana state senate and has been active in politics for several years.

VISIT FULTON, MO., PLANT

R. J. Humelbright and E. P. Stevens, of the American Arch Co. of New York City were recent visitors in Fulton, Mo., where they inspected the plant of the Fulton Fire Brick Co. The Fulton plant is one of those of the American's great system.

J. R. GREEN TAKES OVER IOWA TERRITORY

J. R. Green is now covering the Iowa territory for the A. P. Green Fire Brick Co., of Mexico, Mo. This territory was formerly covered by Edward Emmert.

PUBLISHES ILLUSTRATED PRICE LIST

N. Clark & Sons of San Francisco, Cal., have found that an illustrated catalog and price list is a great aid to selling. An attractive booklet illustrating the ware manufactured, together with the prices on all materials, is published and the illustrated catalog makes it very much more simple for customers to determine their requirements.

SUCCESS OF NEW FIRM CERTAIN

The office of the State Corporation Commission, in San Francisco, has passed on the articles of incorporation of the

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about the installation of hand poked or mechanical producers, rotary dryers or calciners.

Our thirty years' experience in this business will prove valuable to you, when you decide upon an installation.

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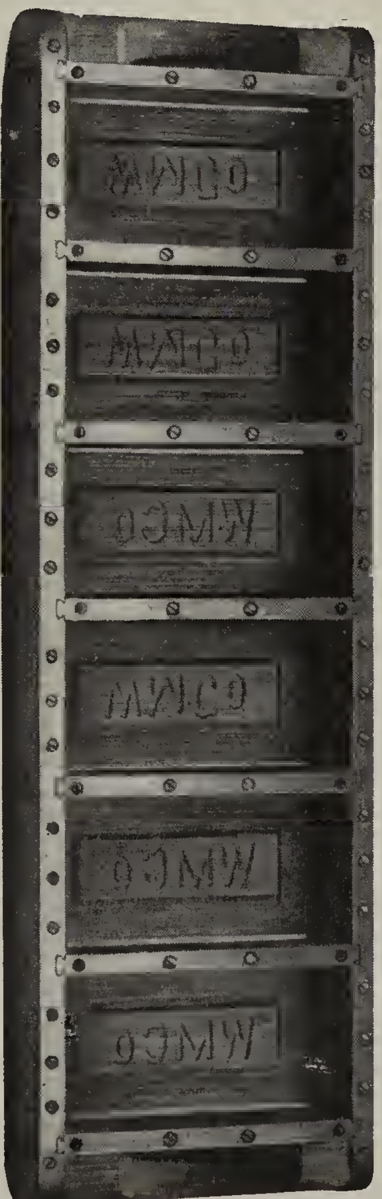

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Steiger-Vallejo Brick Co. and the company is enthusiastically pushing forward its work. They have promise of a great opening season, if they can get their plant operating in time. One contractor has offered to place with them orders for 4,000,000 brick, to be used mostly on one of the largest projected buildings in sight. There is demand for a fine gray brick, after the style of those of some of the old Moorish castles of Spain, and L. A. Steiger, general manager of the company, believes that this brick can be produced at the Vallejo plant in unlimited quantity, and will thus satisfy a need that so far has not been met. These contracts will also carry with them a large demand for face brick and hollow tile.

PAVING BRICK STAND UP WELL IN FRISCO

Among the propaganda going on for the greater use of brick and clay products in structural work in San Francisco, is that also of paving brick, so that quite a little movement is manifesting itself in this line. Attention is called to the condition of Third Street in the city of San Francisco. This is one of the oldest paved streets of the city, and has borne the burden of heavy traffic for long years, when that traffic was largely the traffic of the old horse truck with its heavy steel tires. The street is now having a very little repair for the first time.

MAY ADD 16 KILNS TO PLANT

The Oakland plant of the California Pottery Co. is about to be moved to Merced. Mr. Costello, president of the company states that it is the intention of the company to centralize its production at Merced. This will mean the concentration of 75 more employes there, and the increasing of the present four kilns to 20. The president states that the demand for the company's products is coming in very heavy, from all directions, and that there seems to be promise of great and rapid development. This means that the products will be shipped by the train load. The company is carrying forward a bond campaign for the purpose of aiding in the financing of the new expansions.

FIND NEW CLAY DEPOSIT IN CARDIFF

Cardiff, in San Diego County, bids fair to become one of the main brick and clay products producing centers in California. The Los Angeles Pressed Brick Co. has just discovered a new clay deposit in that locality that seems to offer great possibilities of exploitation. Shipments of clay from the clay beds near Cardiff to the factory of the Los Angeles Pressed Brick Co. in Los Angeles will be commenced early in April. To accommodate these shipments the company has just completed several reinforced concrete bins for storage, the new bins having a capacity of 18,000 tons.

The acquirement of this Cardiff clay will enable the company to turn out a new line of face brick in color effects especially suited to residential and commercial building construction. In addition, the clay is one of the best in Southern California for the manufacture of fire brick, and the plans of the company call for an extensive manufacturing program in the production of this type of brick.

INCORPORATE CARBO BRICK CO.

The Carbo Brick Co., Berlin, Conn., has been organized and incorporated with an authorized capital of $100,000. The incorporators are John Carbo, Edward J. Lardner and Mary C Lardner, all of Kensington, Conn.

WILL BUILD MODERN PLANT IN IDAHO

Plans have been made for the construction of the Idaho Clays, Inc., at Coeur d'Alene, Ida. The company is planning a yearly output of 30,000 tons, the products to be sewer pipe, hollow ware and wire cut face brick. Face brick will be produced in a variety of colors ranging from a lemon yellow to dark brown reds. The plant will be operated by steam, about 450 horsepower. Buildings will be brick with concrete floors and composition roofs making them entirely fireproof. The main dryer building will be one story, 120x700 feet, with overhead heating. The machinery building will be 2½ stories with a basement underlying part of it, 96x96 feet. Machinery to be installed will comprise two ten-ft. dry pans, two nine-ft. wet pans, one 44x60 sewer pipe press, one 50,000 capacity stiff mud brick machine and pug-mill, all with necessary elevators, feeders and conveyors. The company will build twelve 36-ft. round down-draft kilns, two kilns to a stack with individual flues.

Green and finished product will be handled about the plant by electric trucks and tractors.

This plant will be located inside the city of Coeur d'Alene on a 20-acre tract, the raw material being brought in from pits by means of a 5,000-ft. aerial tramway. This plant as outlined was designed by L. A. Spear, president and manager. Mr. Spear was formerly secretary-treasurer and manager of the Washington Brick, Lime & Sewer Pipe Co. of Spokane.

LOANS LARGE SUMS FOR BUILDING

Up to the present time some 75 banking institutions associated with the Chicago Trust Co. in loaning Metropolitan Life Insurance Co. money to home builders have placed in the construction of new houses and apartments, a total of $3,800,000, providing shelter for more than 1,100 families and aiding in the construction of 784 residences and 128 apartments. The annual income of the Metropolitan company is $301,000,000, and this means that there will be considerable money available for home building from this source if the company continues its policy of using a part of its funds for construction. Last year the company placed $75,000,000 thruout the United States in mortgages alone.

EVANSVILLE PLANT TO START WORK

Increased demand for brick has resulted in the decision of the Standard Brick Manufacturing Co. at Evansville, Ind., to open its plants soon, according to John Andres, secretary and treasurer of the company. Both plants have been closed since December.

BID ON 6 MILES OF BRICK STREETS

Bids have been received by the Indiana State Highway Commission from five brick companies on a total of 5,536,000 brick to be used in paving approximately six miles of road in Indiana. The Veedersburg (Ind.) Paver Co. submitted the lowest bid, underbidding F. W. Lucke of Chicago, and the Medora (Ind.) Shale Brick Co. Prices on cement are also being considered by the commission.

PRINTS SPLENDID BOOK FOR DEALERS

A beautiful booklet has been published by the Martinsville (Ind.) Brick Co., and distributed to its dealers. The book contains 21 actual photographs, 8x10 inches, of the company's Rustique Oriental brick building in different sections of the country. The photographs are very fine and are about as good a sales argument as could be supplied. In addition to pictures showing the beauty of Martinsville brick are views of the factory and shale bank. The book also shows a two color reproductoin of the Rustique Oriental face brick and a like number of the new rug brick manufactured by the company, known as the Chenille-Tex, in which the green shades feature.

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with Flexible Bearings.
Switches, Turntables and Track.
THE CHASE FOUNDRY & MFG. CO.
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USE R. & H. PRECIPITATE CARBONATE OF BARIUM TO PREVENT SCUMMING AND THEREBY PRODUCING BRICK THAT ARE RICHER AND DEEPER IN COLOR, CLEANER AND CLEARER IN APPEARANCE.

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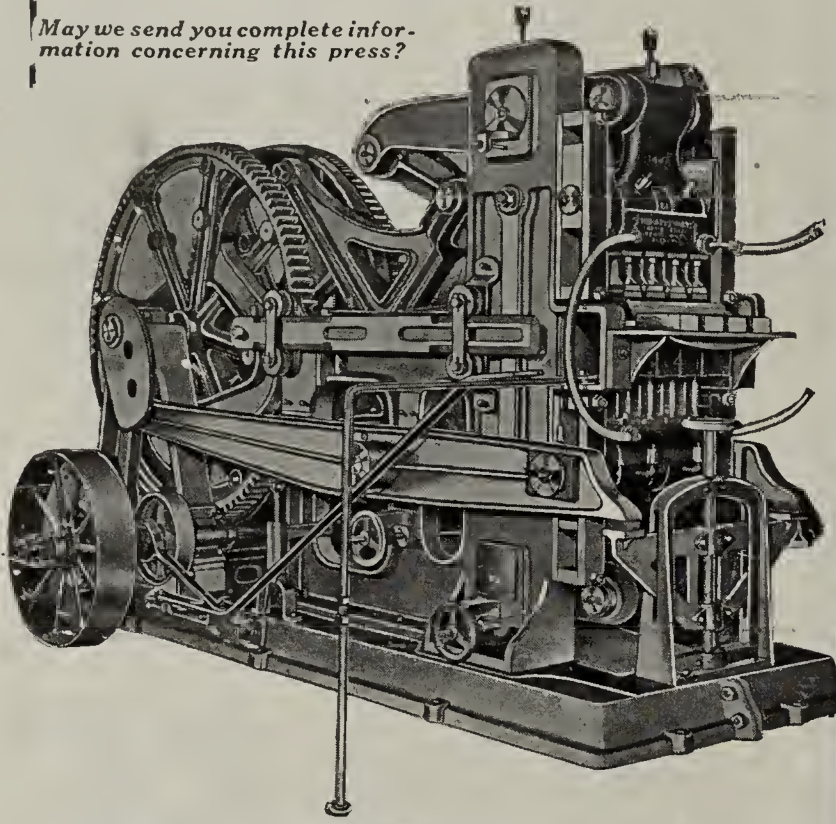

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THE ROLLER PRESS for all clays, shales, fire clays, surface clays, short bonding clays and laminating shales and clays.

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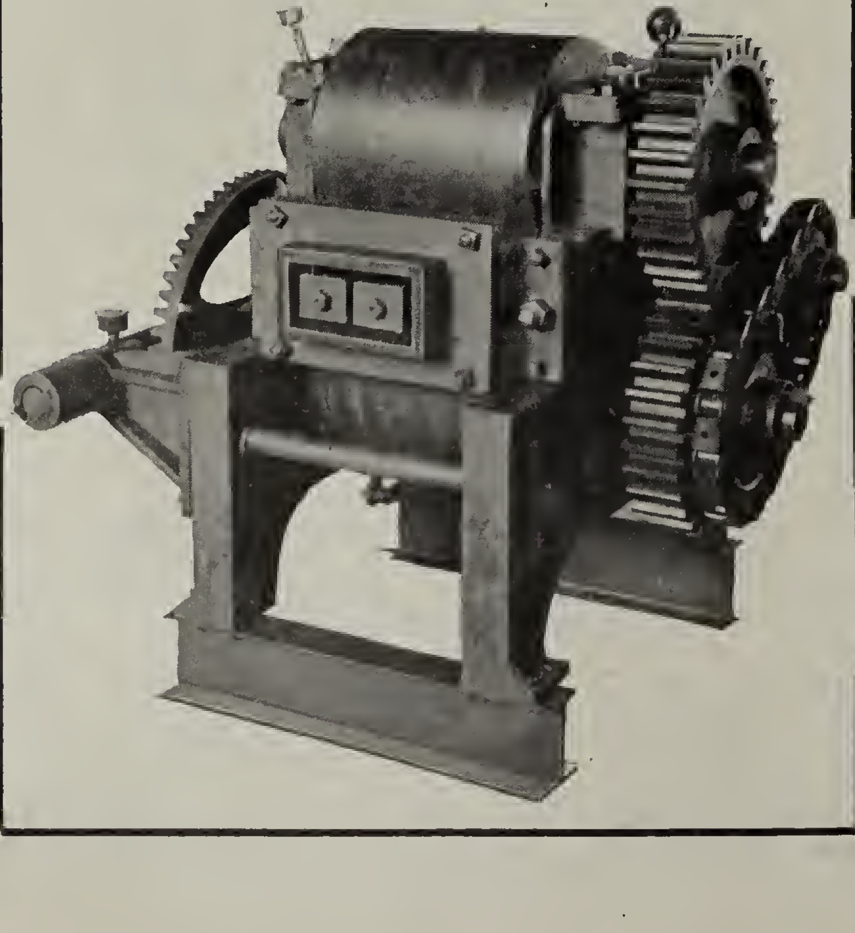

INDIANA MAY RAISE TAXES

The trade in Indiana is becoming more alarmed over an announcement by state officials to the effect that the last assessment of real and personal property in Indiana was much too low to provide an adequate tax return for carrying on the business of the state. It is the general opinion here that instead of reassessing the property which would entail considerably more expense, the state will authorize a straight horizontal increase to make up the difference. Just what the increase will be has not been determined. Business men in Indiana have gone thru one of these horizontal increases and are not anxious for more.

SEEK DROP IN INDIANA FREIGHT RATES

With a view of contributing to lower building costs in Indianapolis during the 1922 spring and summer season, R. B. Coapstick, traffic manager of the Indiana State Chamber of Commerce, has written to T. F. Harnett, chairman of the Indiana district traffic committee, representing the carriers, asking that a reduction of 44 cents a ton in the freight rates on brick from Brazil, Terre Haute and Crawfordsville be made, so that shippers from these points would be on a more equitable basis with brick manufacturers in Danville and in other Illinois points, who ship to Indianapolis. "The rates from Brazil, Terre Haute and Crawfordsville to Indianapolis are around $1.54 a ton," Mr. Coapstick said. "The rates from Alton, Dow and Belleville, Ill., to East St. Louis and Granite City, Ill., are 84 cents a ton. A comparable basis for these rates would mean a rate from Brazil, Terre Haute and Crawfordsville not to exceed $1 a ton, a reduction of 44 cents.

"If this can be brought about, it will mean that pressed brick can be laid down in Indianapolis $1.15 cheaper than under the present freight charges. This is shown by the fact that the rate on brick from Danville to Indianapolis is exactly the same as that from Crawfordsville to Indianapolis, altho Danville is double the distance from this point."

BUSINESS BETTER IN LOUISVILLE

J. T. Howington, of the Coral Ridge Clay Products Co., Louisville, stated that business was very much better, locally, in the state and Southern Indiana. Both hollow tile and brick are moving, and the plant is running full. Mr. Howington said: "Business is of a better class than that handled at any time in seven or eight years, as it is coming in a more normal way, and looks as if the building trade is reaching one of the old time steady periods. Prices are steady with common brick quoted at $15 a thousand on board cars. and $18 delivered; face, $26 on cars and $30 delivered; and tile, 60 per cent. off list on board cars and 50 per cent. off delivered."

ANNEXES FIRE BRICK COMPANY TO CITY

Under an annexation ordinance recently passed, and upheld by the higher courts, Louisville has just taken in eleven square miles of additional territory, including Highland Park, and this includes the local plant of the Louisville Fire Brick Works. While taxes will be higher insurance rates will be lower, and it will mean better streets, lighting, fire protection, and other things, so that the company hasn't any objection to being taken into the city.

TO START COMPANY AT DOVER, ME.

The Chamber of Commerce of Dover, Me., announces that a group of business men of Dover and Foxcroft have organized for the purpose of starting a brick plant at East Dover, Me., within the next six weeks. For the present the names of the men interested are not being announced but they may be communicated with thru the Chamber of Commerce.

CLAY PRODUCTS COMPANY TO BUILD

The Patuxent Clay Products Co., Equitable Trust Building, Baltimore, Md., recently organized, has acquired a tract of land at Patuxent, near Baltimore, for the erection of its proposed new plant for the manufacture of tile and other burned clay products. Plans are being prepared for the initial buildings and construction will be commenced at an early date. The plant is estimated to cost about $100,000, including machinery. I. P. Mills is in charge.

HIRES NEW SUPERINTENDENT

The Wellsville (Mo.) Fire Brick Co. has increased its organization by the selection of W. J. Miller as general superintendent. He will spend part of his time at the New Florence brick plant and the remainder of the time in Wellsville. He has arrived to enter upon his duties.

FAVOR BRICK IN SPITE OF HIGHER COST

It is believed that the State Highway Department will specify that brick shall be used in building a mile and a half of state road near Moberly, Mo., as most of the people living along the road have expressed a preference for brick over concrete. The Lions Club went on record favoring brick and sent a recommendation to that effect to the state commission. The Lynch-McDonald Construction Co. of Moberly made the lowest bid for the brick pavement, offering to do the job for $56,440.92. The cost of building the road would be $47,032.34 if concrete would be used but even at this lower figure brick is preferred.

SHIP FIVE CARS BRICK DAILY

The business of the Harrisonville (Mo.) Brick & Tile Co. has been most satisfactory recently and under the capable management of C. L. Gard, a product is being put out that is finding a ready sale everywhere. The company has established a record of five car loads of brick daily and is selling every one of them at a satisfactory price. The plant has been operated thruout the winter at capacity and has given employment to 70 men, nearly all of whom are residents of Harrisonville. The fact that the plant was running at capacity during the winter, when business conditions were bad, makes Mr. Gard feel that the future holds a cheery outlook for the concern. Several weeks ago the plant eased down on the manufacture of brick to make some tile, and as a result it fell behind in its brick orders and the plant has to be speeded up now to take care of the new business in brick orders.

GREEN THREATENED WITH FLOOD

The plant of the A. P. Green Fire Brick Co. of Mexico, Mo., was recently saved from serious damage and heavy property loss by the hard work and perseverance of the employes of the firm, who staved off a flood that threatened to inundate the pit and cause a shutdown of the plant for an indefinite period. Work began as usual at the plant in the morning but by 7:30 o'clock the water in the creek near the plant was rising so fast that it was evident that the usual means of drainage would be inadequate and that the pit was in danger of being flooded. All of the employes of the plant began to build a dike of sandbags to keep the water back. By 11 o'clock it seemed as if their efforts would be futile and the siren whistle of the plant was blown to warn the people of Mexico that more help would be needed. At one time the water was 25 feet deep in the creek and it seemed as if nothing could be done to keep it from entering the pit.

NATIONAL INCREASES OPERATIONS

The National Fireproofing Co., Perth Amboy, N. J., is increasing operations at its local plant and is now running at close

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to capacity. Additions have been made to the working force, with the adoption of a ten-hour working day.

TILE COMPANY ORGANIZED FOR $5,000

The Baldwin Tile Co., Brooklyn, N. Y., has been organized under state laws with a capital of $5,000, it is said, to manufacture tile and kindred products. The incorporators are F. Hunter, S. Haffner and H. Furst. The company is represented by F. J. Knorr, Albany, N. Y.

WEBSTER BRICK AGAIN WORKING

The plant of the Webster Brick Co., at South Webster, Ohio, has been put into operation and it is up to full capacity. A. L. Fullerton is president and S. K. Day, secretary. Headquarters are located at Chillicothe, Ohio.

OPENS AFTER 3 YEAR SHUT DOWN

The United Brick Co. has announced that the plant at Conneaut, Ohio, will resume operation making building brick sometime between April 10 and 15 with a force of 50 men. The plant has been closed for three years. The United Brick Co. is one of the city's oldest industries.

LEASE BIG AREA OF COAL AND CLAY LAND

207 acres of coal and clay lands have been leased at Sugarcreek, Ohio, with a view to erecting a large clay products plant. Drilling operations will be commenced immediately to determine the depth of the clay and coal. Mick Reiswick and C. L. Pennell are the promoters.

OPENS NEW OFFICE

The Combustion Engineering Corporation has announced the opening of a new branch office at 1137 Guardian Building, Cleveland, Ohio. This office will be in charge of Frank Henderson, who has been associated with several of the most prominent stoker companies in this territory for many years.

FIRE DESTROYS CLAY PLANT

Fire of unknown origin destroyed all the buildings of the Medina Clay Products Co. at Chippewa Lake, Ohio, March 19 and caused a loss of approximately $15,000, officials reported.

The plant was owned by D. L. Cassidy, a former resident of Dresden, and Bernard L. Puritan. It is stated they will rebuild the plant at once.

MOVES OFFICES TO MAPLETON

The Mapleton (Ohio) Clay Products Co. has resumed operations after being idle since November, 1921, according to E. J. Shario, president and general manager. The plant employs 100 men and has a capacity of 50,000 brick per day. The general offices of the company are being moved from Canton to Mapleton.

TO ENLARGE STATE PLANT CAPACITY

Some active steps have been taken by the department of public welfare of Ohio towards enlarging the state brick plant at Junction City. Improvements will consist of a shale crusher, dry pans, additional kilns and sheds. About $85,000 will be expended on the additions and enlargements. Several new boilers will be installed.

FACE BRICK PRICES DECLINE

Prices of face brick in Columbus and central Ohio territory have weakened to a considerable degree in the past fortnight. Some cases of first class face brick selling at $18 or $19 f. o. b. Columbus are reported. But these prices are not really the

How much is an hour worth?

In some places, a bricklayer's hour is worth $1.25. How much is an hour worth to you who make bricks? How much are fifty to eighty hours worth to you?

Wayne Oil Burning Systems, used to fire your kilns, can save you as high as eighty hours on a single burn. Multiply hours saved by your production. Then write us for more details. Ask for Bulletins BCR.

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Kilns and Drier can be adjusted to the highest speed that any material will stand. What could do more?

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market and face brick are selling from $20 to $35, as a rule. Shale face brick are quoted from $21 to $24. No change in the prices of common brick in Columbus territory is reported and they range from $14.50 to $16 delivered on the job.

PLAN NEW $150,000 COMPANY

Charles Weinsz, Louis Weinsz, Adam and Louis Baab plan organization of $150,000 concern to manufacture brick and fireproofing materials. The plant is to be built on the Weinsz farms of 140 acres, a half mile west of Dover, Ohio. The farm is underlaid with shale and fire clay. The present Baab plant will be used to manufacture brick for the new plant and will be dismantled after the new plant is constructed.

ROMIG CLAY ELECTS OFFICERS

E. R. Van Ostran was elected president of the Romig Clay Products Co., Uhrichsville, Ohio, capitalized at $200,000, at an organization meeting Tuesday.

Other officers are: John Gardner, vice-president; P. A. Romig, secretary, treasurer and general manager. These men together with E. J. Romig, J. A. Pearch, Alexander Robinson, and C. W. Rosel will comprise the directorate. The plant will be located in the McCreery farm southeast of Gnadenhutten.

NO MORE PRICE DECLINES EXPECTED

Prices of brick, both face and common, in Columbus and the Hocking Valley region have just about struck the bottom and manufacturers can see no chances for further declines. Manufacturing of brick is being done on a small margin but efficiency methods are being employed as is necessary during times of depression. Common brick, delivered on the job, are quoted from $14.50 to $15.50, while face brick sell from $22 to $35, depending on quality and texture. The latter prices are f. o. b. Columbus.

WILL EXHIBIT 2 BRICK HOUSES

A feature of the coming American Building Exposition, the largest of its kind ever held in the country, will be the extensive exhibits of the Cleveland (Ohio) Builders Supply & Brick Co. Two houses, one on the ever popular small type, the other of larger dimensions, will be erected on the Exhibition floor. Each of these buildings will be full size, and will embrace all the features of brick construction. Different types of common brick will be demonstrated, as well as the Ideal wall, and other similar angles. The interior of the houses will be used for the display of other materials handled by the Cleveland Builders Supply & Brick Co.

COMMISSION DENIES COMPANY'S PLEA

The Ohio Public Utilities Commission has dismissed the complaint of the Cleveland Brick & Clay Co. against switching charges in vogue within the city limits of Cleveland, on the lines of the Baltimore & Ohio, Big Four, Nickel Plate, New York Central and Wheeling & Lake Erie. The finding of the commission was that the rates complained of were not unreasonable. The Cleveland Brick & Clay Co. protested to the commission that competitors outside of the city limits of Cleveland were able to deliver brick within the limits at less cost than the Cleveland company, which was located at closer range. The commission found that the company was not advantageously situated as to transportation, but refused to allow any changes in the rates.

NATIONAL'S OUTPUT INCREASES

The National Fireproofing Co. will resume operations at its East Palestine, Ohio plants within a few days, according to an announcement. The plants were damaged by fire several months ago, but have been entirely reconstructed. The company's aver-

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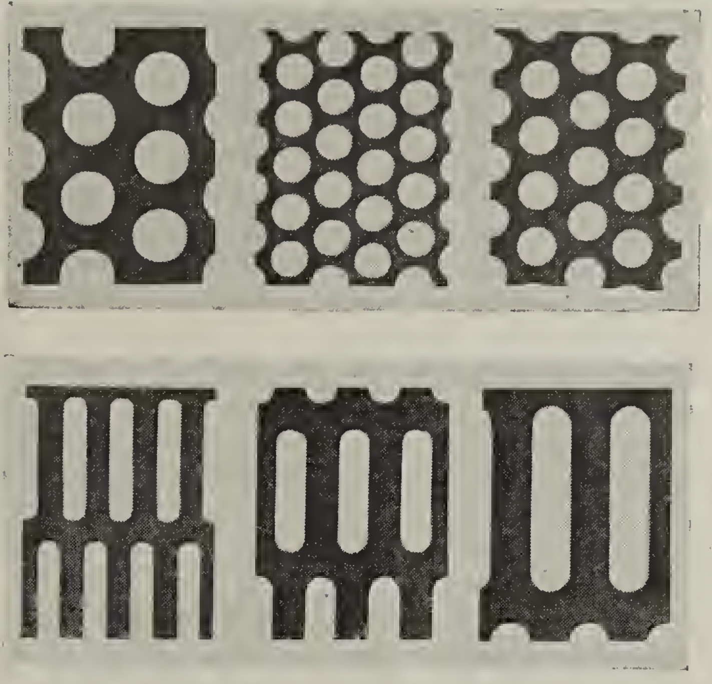

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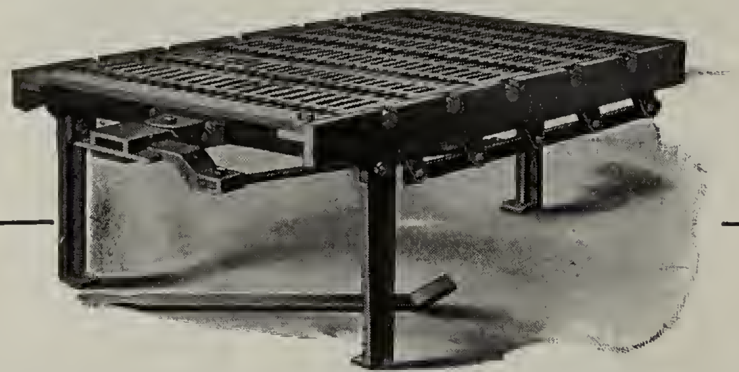

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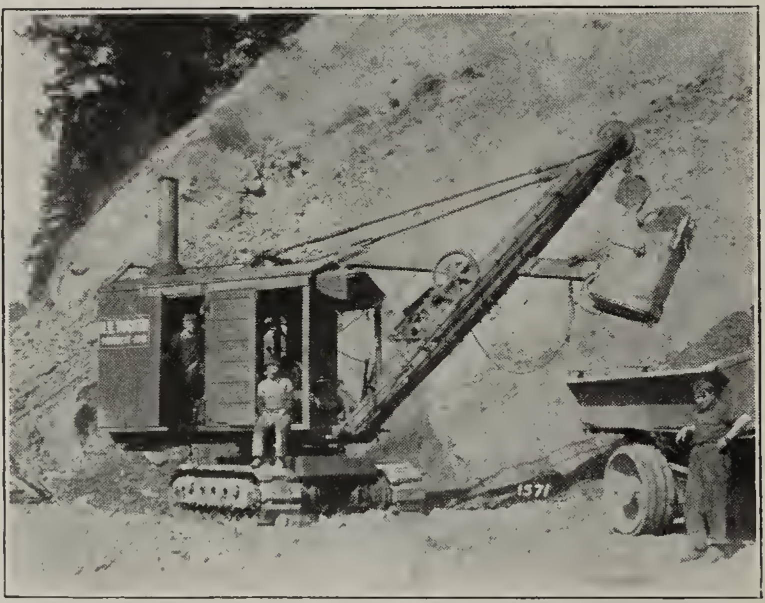

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THE OSGOOD COMPANY
Marion, Ohio, U. S. A.

age is very much greater at present than at the same time a month ago, according to officials, and local operations have been expanded until now the company is operating on a 75 per cent. capacity basis. First quarter earnings of the company will be materially larger than for the same quarter last year, as the work is now progressing on several big Pittsburgh school contracts and business is anticipated from the Mellon National Bank which is now in the course of construction.

STRIKE THREATENS SEWER PIPE PLANTS

1,000 sewer pipe and brick plant workers in the Uhrichsville, Ohio, clay district face idleness as the result of an order issued this week by Thomas J. Price of Midvale, miners leader, revoking the agreement entered into a week ago whereby the 13 mines could furnish coal to clay plants. Complaints regarding the agreement were voiced by other miners at a mass meeting held in Uhrichsville. Operators of other mines also complained of discrimination, said Price. The agreement contained provision that the miners could break the pact at any time.

The time was fixed at eight days to enable clay plants to burn clay now in their kilns.

The Midvale plant of the Robinson Clay Products Co. has a coal reserve on hand that will last two or three weeks.

LARGE SEWER PIPE SALES THIS YEAR

Shipments of sewer pipe in Akron, Ohio, are reported to be heavy by manufacturers of clay products due to the decrease in freight rates, which became effective the first of the present month.

The supreme court decision regarding the powers of the state public utilities commissions to alter freight schedules has not yet resulted in abrogation of the Ohio decision to decrease freight rates on sewer pipe March 1, and manufacturers there do not believe that any change will be made before the season is under way.

Sale of sewer pipe is exceptionally large this year due to the postponement of underground work by municipalities on account of the war and because of inability to obtain labor and their inability to sell bonds.

CINCINNATI MEN ARE OPTIMISTIC

John P. Turpen, president of the Cincinnati Brick Club, said recently that the Moores-Coney Co., with which he is connected, did more brick business during the month of March than in any similar period for over three years. Mr. Turpen looks for 1922 to definitely mark the revival of the building industry, especially brick, and predicts that by June there will be a real, life-sized boom in progress.

The Cincinnati Brick Club held an informal luncheon April 11 at the Chamber of Commerce. Opinions given informally at that meeting were that the prospects for this year were never better and that the large number of new residences going up or on which contracts actually have been let, shows that the tide has definitely turned toward great activity.

ANNOUNCE $30,000,000 HOUSING AND DEVELOPMENT SCHEME

The largest single development in the history of Cleveland, Ohio, and probably the largest housing project of its kind in the history of the entire country, has been announced by Josiah Kirby, president of the Cleveland Discount Co., who heads the development organization. The development will be in the form of an English garden city large enough to accommodate 1,075 families and the estimated cost is $30,000,000.

Land has already been secured in the exclusive Shaker Heights section at a cost of $2,500,000 and a large force of architects are rushing thru final plans which will be ready shortly. A drafting force of 100 men are engaged in carrying out the plans of the architects.

The development will be unique in as much as it will be in the form of a complete community with a theater and market house as well as other facilities in connection. Shaker Heights building regulations forbid apartments and the construction will be in line with this rule, as there will be several long edifices comprising hundreds of homes, each with a properly landscaped terrace in front. The advantage of the planned construction lies in the fact that no frontage will be wasted and the entire development will be in the form of a compact whole. A miniature model of the entire development will be on exhibition at the American Building Exposition which will be held in Cleveland April 22-May 2.

CROWDS ATTEND OPENING OF BOWEN FIRM

Official opening of the Cleveland (O.) Discount Building marked the formal opening of the display room of the Bowen Brick Sales Co., located in that building. At the same time A. B. Loomis, formerly of Loomis Construction Co., joins the Bowen organization as district sales manager. The opening at Bowen headquarters was attended by contractors and architects. Many consumers, visitors to the Cleveland Discount Building, also visited the rooms. The unique paneling, each individual panel being removable from the wall, show close to 50 varieties, as well as new mortar colors and other materials used in face brick and general construction. Each panel in the Bowen display has been equipped with a shade, which can be pulled down, to cover all specimens of brick with the exception of those most desired by the customer. In this way confusion in selection is reduced, and serves both seller and buyer to come to a better final conclusion, explains Dana T. Bowen, head of the firm.

TO REDUCE CAPITAL

The Harbison-Walker Refractories Co., Pittsburgh, Pa., has called a meeting of stockholders on May 15, to approve plans for a reduction in capital from $36,600,000 to $30,000,000. P. R. Hilleman is secretary.

HAS THREE MONTHS ORDERS ON BOOKS

The Lancaster (Pa.) Brick Works, according to Mr. Horning, manager, has enough orders on its books to keep the plant busy for at least three months, and it is expected to run full thru the entire year. The company has one order for more than 1,000,000 brick for a large factory addition, besides the brick that is in demand for dwellings. The local trade absorbs all of the company's product.

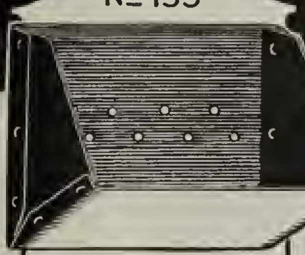
CONSIDER REVISION OF PHILADELPHIA CODE

The subject of Philadelphia (Pa.) building code and the need for revision has been placed before the industrial committee of the Philadelphia Chamber of Commerce. A sub-committee of three members, A. D. Smith, John P. Hill and C. F. Bower, has been named to make the preliminary investigation into the matter and to select speakers to present all angles of the subject at a meeting to be held shortly.

ORGANIZE NEW PENNSYLVANIA CONCERN

The West Point Shale Brick Co., Norristown, Pa., has been organized under Delaware laws, with a capital of $100,000, to manufacture brick and other burned clay products. The incorporators are George Wagner, Norristown; M. M. Sweeney, Philadelphia, Pa., and S. Swigler, Lansdowne, Pa. The company is represented by the Capital Trust Co. of Delaware, Dover, Del.

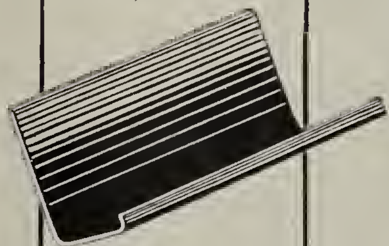
№ 133



Acute heel shelf bucket with beveled end for handling mud, ore, coal, broken stone, etc. Elevates at low angles and without a boot.

No. 131—

A square heel shelf bucket.



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Prompt delivery on any kind of elevator bucket you need. Big assortment carried in stock. Special sizes quickly made to order.

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What Will Your Condition Be?

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Operating cost averages $7.50 per day including operator

The one-man excavator is an economical machine especially adapted to plants of 25,000 to 100,000 capacity. Gasoline or electric power, track or caterpillar type mounting.

Investigate this machine today Mr. Clay Products Manufacturer' Ask for complete information. It won't obligate you.

Bay City Dredge Works
Bay City, Mich.

HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
and
Grinders

Especially Prepared
for Brick Making

Sales Office: CHARLESTON, W. VA.

**DIESEL ENGINES
FOR CLAY PLANTS**

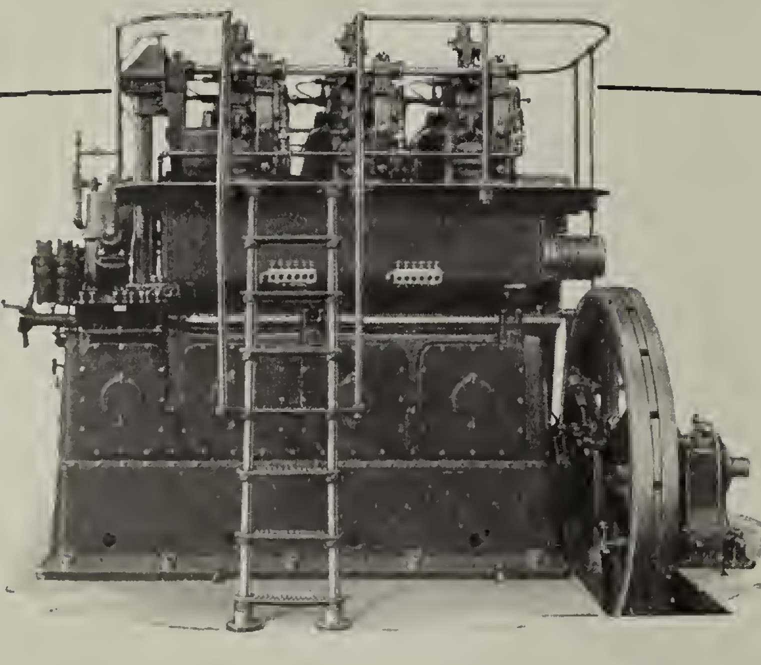
Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal types furnished.

THE HADFIELD-PENFIELD STEEL COMPANY
Bucyrus Ohio

Formerly the American Clay Machy. Co.



CLOSES YEAR OF LOWEST EARNINGS

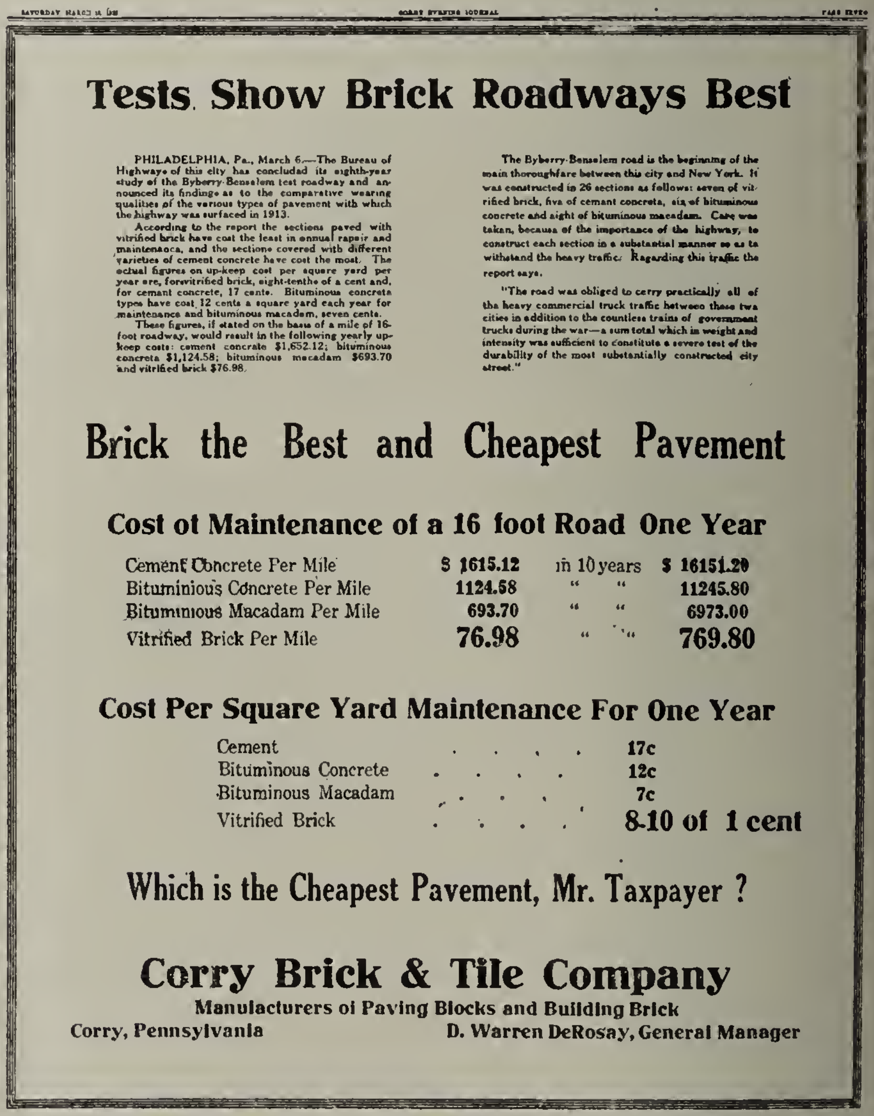
The nineteenth annual report of the Harbison-Walker Refractories Co., covering operations for 1921, issued recently, shows that earnings for the year were relatively the lowest in the history of the company, due to readjustment of wages, selling prices and inventories, but as Chairman of the Board of Directors H. W. Croft told stockholders, they were satisfactory.

Reviewing the year Chairman Croft says that in January, 1921, sales were 30 per cent. of capacity, and by April they had declined to 15 per cent. By December they had recovered somewhat and reached 40 per cent. Inventories were thoroly liquidated during the year, and "in this respect our company is in a strong position." Concerning the outlook for 1922 Chairman Croft says, "As to general conditions and future prospects of the refractories industry, our own survey of the situation after conferring with our best informed customers, leads us to believe that we can look for a continuance of business at about the same rate as in December, and while we hope to see a gradual increase in that rate, there is at present nothing in sight that would warrant any expectation for the return of normal business during the present year."

The next stockholders meeting will be held on April 17 next.

EXAMPLE OF GOOD ADVERTISING

The advertisement reproduced herewith appeared in the Corry (Pa.) Evening Journal and occupied a full page. It shows how the local company, the Corry Brick & Tile Co. made use of information supplied by the National Paving Brick Manufacturers Association in a local advertising campaign. This kind of advertising to the taxpayers who supply the money is designed to make them think and is bound to bring results.



Tests Show Brick Roadways Best

PHILADELPHIA, Pa., March 6.—The Bureau of Highways of this city has concluded its eighth-year study of the Byberry-Bensalem test roadway and announced its findings as to the comparative wearing qualities of the various types of pavement with which the highway was surfaced in 1913.

According to the report the sections paved with vitrified brick have cost the least in annual repair and maintenance, and the sections covered with different varieties of cement concrete have cost the most. The actual figures on up-keep cost per square yard per year are, for vitrified brick, eight-tenths of a cent and, for cement concrete, 17 cents. Bituminous concrete types have cost 12 cents a square yard each year for maintenance and bituminous macadam, seven cents.

These figures, if stated on the basis of a mile of 16-foot roadway, would result in the following yearly upkeep costs: cement concrete $1,652.12; bituminous concrete $1,124.58; bituminous macadam $693.70 and vitrified brick $76.98.

The Byberry-Bensalem road is the beginning of the main thoroughfare between this city and New York. It was constructed in 26 sections as follows: seven of vitrified brick, five of cement concrete, six of bituminous concrete and eight of bituminous macadam. Care was taken, because of the importance of the highway, to construct each section in a substantial manner so as to withstand the heavy traffic. Regarding this traffic the report says.

"The road was obliged to carry practically all of the heavy commercial truck traffic between these two cities in addition to the countless trains of government trucks during the war—a sum total which in weight and intensity was sufficient to constitute a severe test of the durability of the most substantially constructed city street."

Brick the Best and Cheapest Pavement

Cost of Maintenance of a 16 foot Road One Year

Cement Concrete Per Mile	$ 1615.12	in 10 years		$ 16151.20
Bituminious Concrete Per Mile	1124.58	"	"	11245.80
Bituminious Macadam Per Mile	693.70	"	"	6973.00
Vitrified Brick Per Mile	**76.98**	"	"	**769.80**

Cost Per Square Yard Maintenance For One Year

Cement	17c
Bituminous Concrete	12c
Bituminous Macadam	7c
Vitrified Brick	**8-10 of 1 cent**

Which is the Cheapest Pavement, Mr. Taxpayer ?

Corry Brick & Tile Company
Manufacturers of Paving Blocks and Building Brick
Corry, Pennsylvania
D. Warren DeRosay, General Manager

This Type of Advertising Is Very Convincing.

EVANS PIPE CO. COMPLETING PLANT

The Evans Pipe Co., Columbia, S. C., expects to start manufacturing sewer pipe about June 1. A modern plant with a capacity of 150 tons per day is being completed. The plant is equipped thruout with new and modern machinery.

HOUSTON TO HAVE NEW PLANT

The Model Brick Co., Houston, Tex., has been incorporated with a capital of $10,000, to manufacture brick and tile, a report states. The incorporators are W. J. Carter and J. F. Meyer, both of Houston.

NEW WEST VIRGINIA COMPANY

The American Shale Brick Co., Martinsburg, W. Va., recently organized with a capital of $100,000, will operate a local plant for the manufacture of common brick, it has been announced. The company is headed by F. Vernon Aler, Martinsburg, and Charles L. Magee, Washington, D. C.

DRAIN TILE POPULAR ON WEST VIRGINIA FARMS

Farmers of West Virginia are showing a keen interest in the improvement of their land by tile drainage according to the extension service of the state university. The service rendered by the department included during the past year, examination of 35 projects in 16 counties, in which 1,502 rods of tile drains were planned for 202 acres of wet land. About 30 per cent. of this work has been completed or is now under construction. In addition to the planning of drainage systems a number of demonstrations in tile laying have been made in the state.

MACK PLANT OPERATING AGAIN

The Etna plant of the Mack Manufacturing Co. of New Cumberland, W. Va., was placed in operation this week after being idle for several months. The Crescent works operated by the same concern will be started as soon as repairs which are being made to the machinery are completed. While the Etna plant was idle a number of changes and improvements were made. The position of the brick machines was changed, a new 150 ton clay bin erected, two feeders and three new clay elevators installed and a new hand stoker for the boilers has been put on. The Mack Company is engaged exclusively in the manufacture of paving block.

WILL DOUBLE CAPACITY

Bazan Bay Brick & Tile Co. Limited, Sidney, B. C., had a very successful year in 1921. The company is sold out this year and has decided to increase the capacity of the plant from 20,000 to 40,000 brick per day by installing new equipment. It is felt that the increased demand will take care of the increased production.

⁂

"CLEAN HOUSE AND COOPERATE"

(*Continued from page 616*)

only by full effort and elimination of every waste in industry.

This brings me into the area of my second theme—the elimination of waste in manufacture and distribution. I do not intend to enter into details, for I need only to mention the questions of simplification and standardization of dimensions and of quality, the standardization of buying and selling specifications, the greater uniformity in construction contracts, the simplification of building codes, and the better synchronizing of different construction industries towards the elimination of intermittent employment.

The Importance and Why of Simplicity of Methods and Dimensions

The term "simplification" we have been using to cover reduction in the tremendous wasteful range of varieties in nearly all products. You gentlemen will certainly admit that the

ATLANTA, GA. BALTIMORE, MD. BOSTON DETROIT
PITTSBURGH, PA. PHILADELPHIA MONTREAL MINNEAPOLIS NEW YORK CITY
SAN FRANCISCO ST. LOUIS, MO. TORONTO WINNIPEG, MAN.

MORSE Silent Chain Drives are 98.6% efficient for small or large drives. No worry about belt trouble, slippage of power and loss of production where Morse Chain Drives are installed.

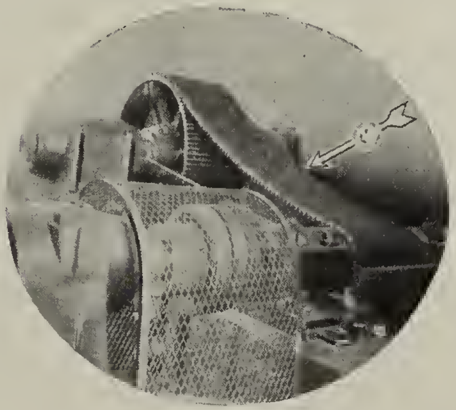
Write us if you have a transmission problem. We give engineering service without any obligation.

Drop a Card to the Nearest Morse Engineer

MORSE CHAIN CO.

Largest Manufacturers of Silent Chains in the World

ITHACA, NEW YORK



CHARLOTTE, N. C. CHICAGO CLEVELAND KANSAS CITY, MO.

"Minster" Industrial Locomotives

For Service and Lasting Economy

New Model "F"—Six Ton

There are many special features incorporated in this new Minster Model "F"; features that make it totally successful for use in clay plants.

Information on request

THE INDUSTRIAL EQUIPMENT CO.
510-516 Ohio St. Minster, Ohio

Eastern & Export Department
THE HERBERT CRAPSTER CO., Inc.
1 Madison Avenue, NEW YORK CITY

What Is An Appraisal?

Appraisal service goes further than merely to answer the question: "WHAT IS THE VALUE OF MY PLANT?"

It reveals the value of every item that goes to make up the total value, and segregates these values into groups which are absolutely necessary if the promise of intelligent plant accounts, accurate costs, adequate protection and financial strength is to be fulfilled.

Write for details today.

THE AMERICAN APPRAISAL CO.
MILWAUKEE

Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Indianapolis, Los Angeles, New Orleans, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Seattle, Syracuse, Tulsa, Washington

Robinson's Kiln Bands

It is not scientific methods nor modern equipment alone which make Robinson Kiln Bands the choice of discriminating buyers—but the fact that they are manufactured from the standpoint of quality, and that they have proven themselves worthy in many installations.

Let us quote you on your requirements

FRANK H. ROBINSON
Dryer Cars and Clay Working Equipment
Factory and General Office, Pittsburgh, Pa.

dimension of varieties of almost every component in construction industries can be halved or quartered to the great advantage of all groups. These economies in production and construction ramify into everything from brick, lime, stone, lumber and hardware, to paint. These efforts do not need to trespass the field of variety and style nor to undermine the distinction of any manufacturer. They can be accomplished in no way except thru the voluntary action of trade associations and thus thru cooperative effort in the trades.

In these trades there are three groups of organizations:

First, of the producers and distributors of materials.

Second, of the representatives of the consumers thru the contractors, architects and engineers.

Third, of labor thru the different trades.

I have before me a proposal of the consumers' associations to consolidate their organizations and to demand certain standards both of business ethics and products from the producers and distributors of building materials. I believe cooperation is better than antagonism, and if the right and forward thinking men on both sides can get together, they can solve these situations.

I have in my mind such a case recently where the paving brick manufacturers cooperated, thru the Department of Commerce, with the municipal engineering associations to reduce the variety in the dimensions of paving brick from over sixty in number to seven,—to the mutual benefit of the manufacturers and the public.

I Believe in Trade Associations

And this brings me again to trade associations themselves, whether manufacturers, distributors or workers. I believe in them. They are a complete necessity in our growing economic life. They can and have been mis-used. They can make for stability and economy in industry and for public welfare. Their two greatest fields of usefulness lie in the lifting of moral standards in these trades and in the increased efficiency of our production and distribution.

This question of reduction of national waste is one of our first problems as a nation. If we would recover the losses of war, if we would hold our own in foreign trade, if we would maintain and increase our high standards of wages and living at home, it can only be accomplished by cutting out our national lost motion and waste. The building trades can pioneer a great trail of national advance in this direction.

It has been my ambition that the Department of Commerce should cooperate with every rightful effort to accomplish these purposes; that it should never attempt to dictate to our business or commerce; but that it should itself be part of the cooperative effort of the whole community to our economic betterment. It is in this vision that we offer you our assistance and help. In the development of a sense of cooperation in industry, to these ends we will reinforce the foundation of our economic life in individual initiative,—not in the patent medicines of government interference.

* * *

THE BUILDING SITUATION

(*Continued from page* 621)

on the job, as against a previous figure of $60; and high grade material, $60, as compared with former quotations of $70 and $75.

Sewer Pipe Prices

Standard sewer pipe, 50 per cent. off list; double strength sewer pipe, 35 per cent. off; wall coping, 45 per cent. off; and flue lining, 50 per cent. off list.

Hollow tile has recorded a decline during the past fortnight, the figures being:

Size 4x12x12 inch, $94 a thousand, as against $96 previously; 8x12x12 inch, $177, as compared with $182; and 12x12x12 inch, $244 a thousand, as against $248, heretofore. The change has not been pronounced enough for any reduction in small lot quantities at the yards.

Providence dealers quote:

Common brick, truckloads, on the job, $18 to $20 a thousand; fire brick, $70 to $85; fire clay, $1.50 per bag; drain tile, 12 and 16 cents per foot, for three and four inch material, respectively.

New York City continues under peak conditions in the line of residential work, and the advent of spring has brought an influx of new operations. In the Bronx alone, the local building bureau estimates that $50,000,000 is being invested in new dwellings. Brooklyn and Queens hold a closely similar position, with a careful estimate of Brooklyn work showing in excess of this amount. Manhattan takes the lead in more costly structures and there is easily $75,000,000 worth of work in sight here. Work involving over $30,000,000 is now out for estimates at the offices of the different contractors.

Brick Moving Actively

Just what the coming weeks hold for the brick producer in the eastern district is well exemplified in the operations during the last week in March at New York, in reality the opening of the spring season. For the first time in years, shipments to an amount of 65 barge loads reached the city from the Hudson River yards, and every barge load was sold almost as soon as it arrived. Brooklyn absorbed 33 barges, while 16 were sent to Manhattan destinations, with four to the Bronx, eight to New Jersey, and the remainder to Long Island points. The first week in April produced 49 barge arrivals, with a distribution of 48 of the loads.

Prices on brick at New York are:

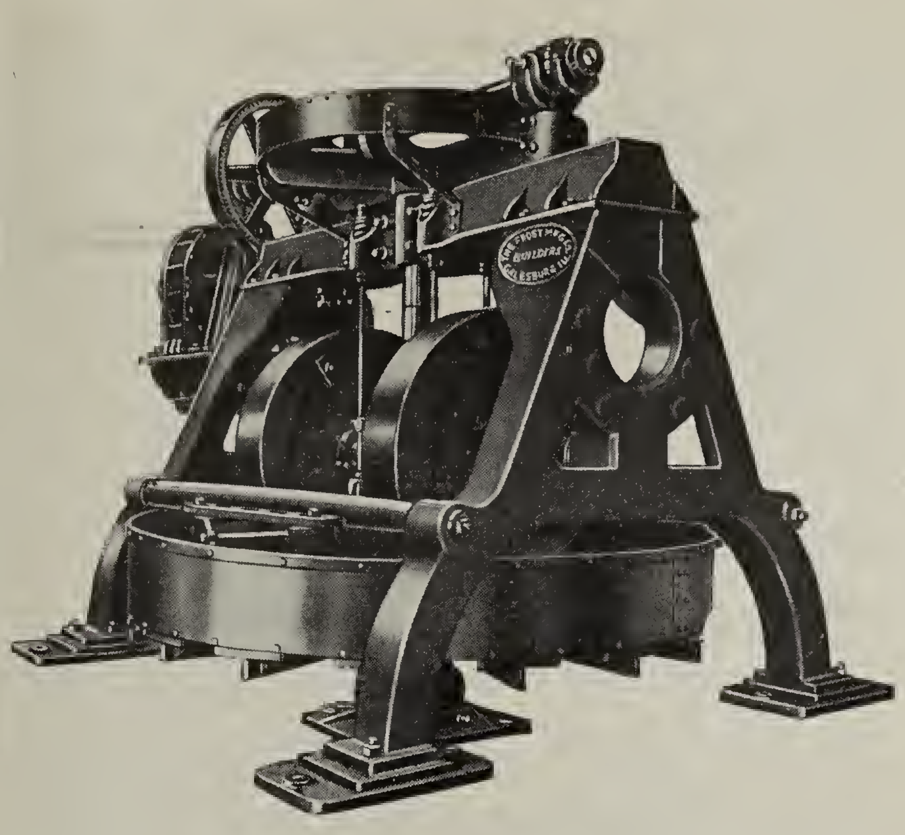
Hudson River common, at dock, $16 and $16.50, wholesale, with majority of sales at the latter figure; at this time last month, producers were receiving $18 in barge lots. Dealers are quoting $19.40 and $19.90, delivered on the job. Raritan brick is selling at $16.50 and $17, wholesale; second-hand material is priced at $45 for load of 3,000, delivered on the job. Face brick, reds, $45; buffs, $50; grays, $53, delivered; Colonials, $45. Fire brick is $60 and $70.

Hudson River Plants to Reopen

Brick yards in the Hudson River district are making ready for immediate production. The season is expected to start earlier than usual, and manufacture, undoubtedly, will be considerably heavier than in several seasons past. At Haverstraw, there has been particular activity during the past fortnight for the assembling of barges for shipments to New York, and this district anticipates some record-breaking figures for the volume of material to be sent to the market. Coal dust, used for heat radiation at the different yards, is in quite scarce supply at the present time.

Practically every city and town in the New Jersey district reports sizeable work under way, with housing about 70 per cent. of the total operations. In the Raritan River section, a marked building boom has developed in recent weeks, with Perth Amboy, Keyport and vicinity investing many thousands of dollars in new dwellings and small apartments; Raritan River brick is in heavy demand for current work.

Residential construction continues as the dominating feature of the industry at Newark, N. J., and surrounding districts. The month of March rounded out a total of $3,053,000 in the city, covered by 389 building permits, as compared with $1,619,750 in the same period a year ago. The building department records show 36 new brick dwellings for the month. The aggregate housing work for March in the city reached $1,415,360 of the total noted.

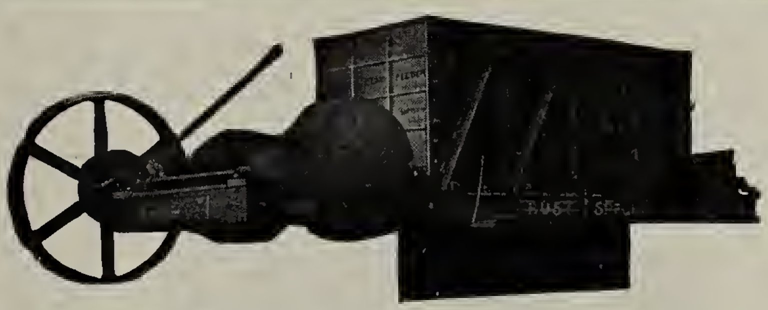


DO YOU KNOW?

That Frost Pans aim to give you the best quality
of material, workmanship and fabrication
that can be obtained.

SEND US YOUR INQUIRIES

THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851



This Machine Will Mean Profit for You

The Marion Rust Special Feeder Mixer will help you to reduce your costs. It will eliminate your pug mill man and keep your off-bearers on the jump every minute.

The Marion Rust Special will enable you to get more perfect ware with each burn, because it mixes and tempers your clay more perfectly.

Ask for our latest catalog describing this machine and other Marion Clay Plant Equipment. It will not obligate you.

Marion Machine, Foundry & Supply Co.
P. O. Box 395
Marion, Indiana

RUBBER BELTING

Is the most economical form of belting for the various kinds of transmission drives used in the brick and clay industry.

And where can you find as satisfactory an article for elevating and conveying purposes as rubber belting?

Our belting experts will gladly assist you on any belting problems.

Write us today for samples and prices

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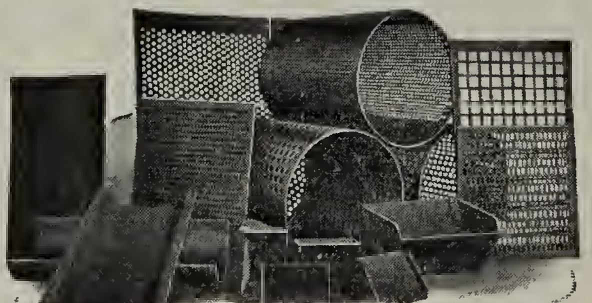
HENDRICK SCREENS
FOR ALL PURPOSES



ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
LIGHT STRUCTURAL WORK
LIGHT AND HEAVY STEEL
PLATE CONSTRUCTION

Ask for your copy of the Perforated Metal Handbook

HENDRICK MFG. COMPANY
CARBONDALE, PA.
NEW YORK OFFICE: 30 Church St.
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New Jersey Brick Prices

Hackensack, at the kilns, 15 and $16 a thousand; delivered on the job, $18 and $19, according to length of haul; Paterson dealers are asking $18 and $19; Newark yard quote $17.50 to $18.50, delivered. Kiln quotations at Trenton vary from $15 to $16, and for delivered material, around $18. Camden dealers have closely similar figures. Face brick is $45, upwards. Fire brick, $60 and $70, with very high grade material around $75.

The seasonal yards at Hackensack and Trenton, as well as in outlying points in the state, are commencing their season run, and a good production is now planned.

For the first three months of the year in Philadelphia, plans have been filed for about 2,200 dwellings, with estimated cost in excess of $9,000,000.

Brick prices at Philadelphia are:

Best grade common, $16 a thousand in carload lots; $17.50 and $18, delivered, according to distance of haul. A number of companies, such as the Peerless Brick Mfg. Co., are quoting special prices in carload lot shipments, covering both common and face brick. Face material is $45 to $50; fire brick, $60 and $70, regular stock. Paving brick, four inch, is $42 a thousand in carload lots.

Building totals at Wilmington, Del., for March, reached close to $100,000 and with the impetus given to construction with the turn of the spring season, April and May aggregates are expected to exceed this figure. The bulk of current operations is devoted to residential work and repairs to present structures. Common brick is selling at $18 and $19, delivered; face brick, $40 to $50.

Baltimore Shows Gain

The month of March at Baltimore, Md., showed a gain of $2,599,000 over the figures of February for building operations of all kinds in the city. The total March work reached $4,668,720, covering the old city and the new annex. The same month of a year ago showed an indicated investment of $2,673,720. During the last month March, 1922, plans were filed for 89 two-story brick dwellings, with a value of $398,000. Housing work is still the big feature of local operations.

First grade common is selling at $20, delivered; carload material, $17.50 and $18. Water-struck selections, $30; face brick, $43 to $50; fire brick, $60 to $75, according to selection; vitrified paving brick, $36 for three inch stock to contractors, delivered at the yard.

Machinery and Equipment

Devices and Methods, New and Old
Concerning Which Information of Interest
to the Clay Manufacturer is Published

CATERPILLARS FOR R. R. TYPE SHOVELS

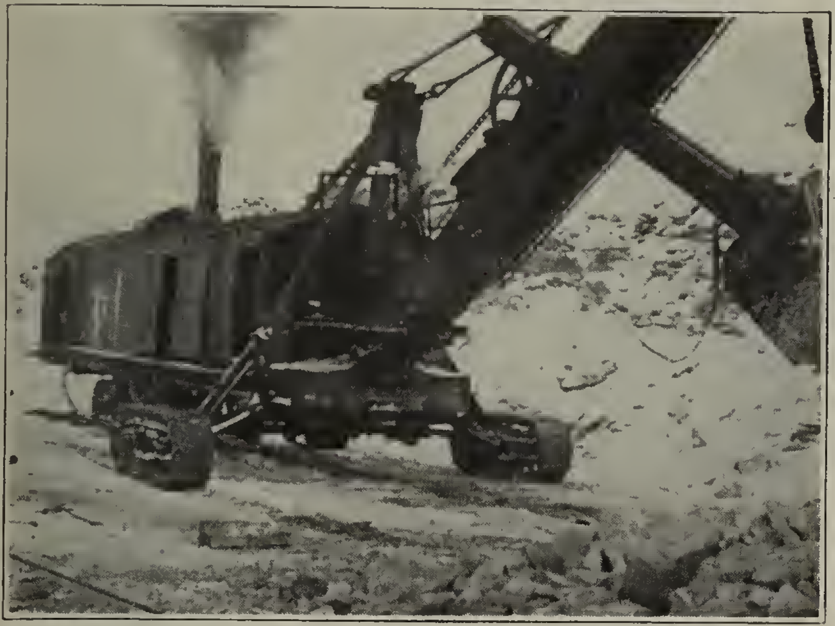
The Bucyrus Co. of South Milwaukee, Wis., has recently announced that it is prepared to equip all sizes of railroad-type shovels with caterpillar traction.

This announcement, because of the economies of operation thus possible, should prove of particular interest to all present users of railroad-type shovels, as well as to prospective purchasers.

This installation may be made on all sizes of railroad-type shovels up to the heaviest now built.

The mounting consists in general of two forward caterpillars, replacing the jack arm, and two rear caterpillars mounted under the rear end of the shovel.

The front caterpillars are so designed that they can swivel and adjust themselves to unevenness of the ground. Both front caterpillars are drivers. The rear caterpillars consist of two caterpillar units mounted on the same frame. They are designed with sufficient strength to permit the crossing of holes and ditches without the delay incidental to filling in.



New Caterpillar Mounting of Railroad Type Shovels

Steering is accomplished thru the rear caterpillars. The massive steering arm is integral with the pintle of the rear caterpillar trucks. It carries a heavy gear segment which engages a pinion on a vertical shaft. It is driven by an independent center valve, reverse type engine, suspended underneath the car frame. This engine may be operated either from the operator's stand or from ground alongside the rear caterpillars. Steering in curves of large diameter can be accomplished by the swinging of the boom without the steering mechanism.

Propelling is accomplished thru the front caterpillars. Both caterpillars may be driven together or each one independently, forward or backward. The propelling speed is about half a mile per hour. The tractive power is sufficient to enable the shovel to climb with ease 15 to 20 per cent. grades. For transportation by rail, railroad trucks may be easily substituted.

NEW SHOVEL USES A DOLLAR A DAY FOR FUEL

A few months ago the Bucyrus Co. announced the addition to its line of products of a gasoline shovel of a distinctly novel and very much improved type, the most revolutionizing feature of which was the ingenious method of operating the thrust without the use of an independent engine mounted on the boom, whereby even more power is obtainable than with a steam shovel of the same size.

This company has now developed, after a long period of thoro experimentation, the use of a Diesel type engine for this shovel. The importance of this announcement lies principally in one outstanding fact, the fuel cost. This shovel, known as the Bucyrus 30-B oil shovel, will use as fuel any cheap, low grade oil of high heat value which will flow freely.

The saving in the cost of fuel thus obtained is very great. This machine has been under severe test for several months, under strenuous winter conditions, both as a shovel and as a dragline. These tests have shown that with fuel oil at 6c per gallon this machine will consume 1¾ to 2¼ gallons of fuel oil per hour. This means a fuel cost of 10½c to 13½c per hour, or, roughly, between $1 and $1.25 per day of average operation.

The engine is of the full Diesel type, not the semi-Diesel. It is what is known as a mechanical injection engine, developing

Save Money!!

The Burton-Townsend Co. saves $12 per day with this equipment.

Any brick manufacturer can save money with a

GALION UNLOADER

Our engineers are at your service.

Ask us for further details.

The Galion Iron Works & Mfg. Co.
GALION, OHIO

First Cost Low
Dividends High

The Meir Brick Transport ready for loading in kiln of plant where delivery costs were reduced over $1.00 per thousand.

NORMAN L. MEIR
520 South Fifth Street
LA CROSSE, WIS.

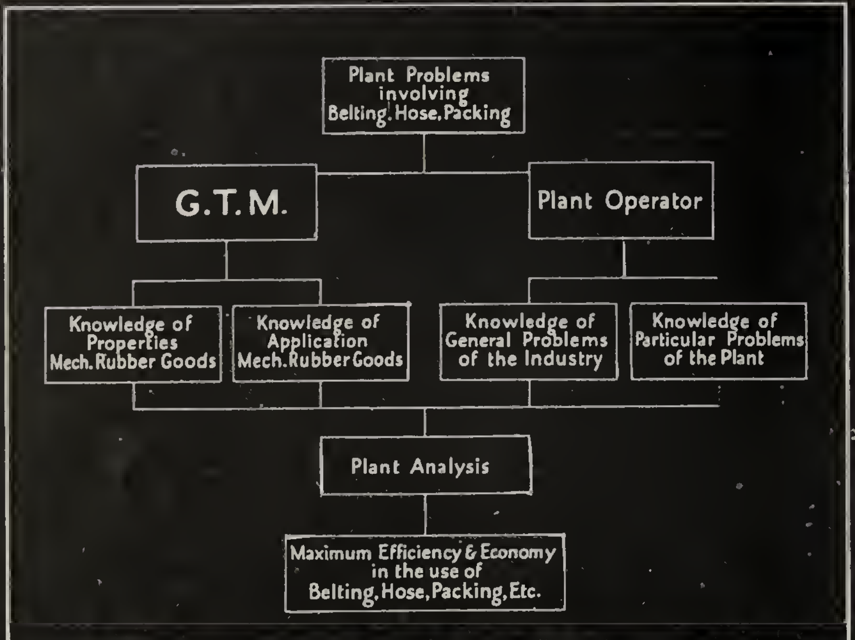

Plant Problems involving Belting, Hose, Packing
G.T.M.
Plant Operator
Knowledge of Properties Mech. Rubber Goods
Knowledge of Application Mech. Rubber Goods
Knowledge of General Problems of the Industry
Knowledge of Particular Problems of the Plant
Plant Analysis
Maximum Efficiency & Economy in the use of Belting, Hose, Packing, Etc.

CHART SHOWING FUNCTIONS AND FACTORS OF THE GOODYEAR PLAN OF PLANT ANALYSIS

Copyright 1922, by The Goodyear Tire & Rubber Co., Inc.

Plant Analysis Service—and the G. T. M.

Look at this chart. It pictures, in the language of the plant superintendent and the industrial engineer, the place occupied by the G. T. M.—Goodyear Technical Man—with relation to your belting, hose and packing problems.

It identifies the G. T. M. for what he is, the tested link in the chain of service connecting your need for efficient plant operation, and your knowledge of the special working conditions of your plant, with the Goodyear Plan of Plant Analysis and the products Goodyear makes for industrial use.

The G. T. M. is an expert in his line. He knows the properties of good mechanical goods. He is trained in the science of their specification and application. His work takes him into many plants, in many industries, so that he is familiar with most transmission and conveying problems, and is a practical authority on many of them.

When he comes to your plant, he comes as a friendly analyst of your operating problems, your troubles, maybe. He doesn't pretend to know it all. He takes the advice of your superintendent and engineer. He gives close attention to their experienced knowledge of your particular working conditions.

His sole object is to fit what he knows about belting, hose or packing to the demonstrated conditions of service in your plant. If he can find out what you need, and Goodyear can furnish it, he will recommend it to you, and after its installation he will follow it up with a sincere service.

Isn't it logical that a belt, or other equipment, that is constructed right in the first place, and then is specified intelligently to the work it is to do, is much more likely than any other product is to serve you longer and better, with freedom from trouble, and return to you the full value of its utmost efficiency and economy? The Goodyear Analysis Plan is based on that reasoning, and the G. T. M.'s work is to insure that you get the equipment that will serve you longest and best.

There is a G. T. M. in your neighborhood. Call on him for an analysis of your mechanical goods problem, whether it involves a single unit or an entire plant, a conveyor or a transmission, a hose or a packing equipment. For further information about the G. T. M., and his work, or the kind of service Goodyear products give in your particular industry, write to Goodyear, Akron, Ohio, or Los Angeles, California

GOODYEAR

55-H.P. at the conservative speed of 360 r.p.m. Its cylinders are 8x10½ inches. It is a heavy duty, slow speed engine of particularly rugged and heavy construction, adapted well to the severe service it must undergo in excavation work.

New Shovel Operated by Diesel Engine.

More detailed information may be obtained from the Bucyrus Co., South Milwaukee, Wis., upon application.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912

of "Brick and Clay Record" published Bi-Weekly at Chicago, Ill.……………… for April 1, 1922.

State of Illinois,
County of Cook.
SS.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Edwin G. Zorn, who, having been duly sworn according to law, deposes and says that he is the Editor of the "Building Supply News" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and address of the publisher, editor, managing editor, and business managers are:

Publisher: Industrial Publications, Inc.……….Chicago, Ill.
Editor: Edwin G. Zorn……………………….Chicago, Ill.
Managing Editor: F. L. Steinhoff……………Chicago, Ill.
General Manager: H. H. Rosenberg………Homewood, Ill.
Business Manager: David B. Gibson……..New York, N. Y.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

H. H. Rosenberg…………………………Homewood, Ill.
David B. Gibson…………51 E. 42nd St., New York, N. Y.
Edwin G. Zorn…………7583 S. Sangamon St., Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent., or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state)……………………….None.

4. That the two paragraphs next above giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Edwin G. Zorn.

(Signature of editor, publisher, business manager, or owner.)
Sworn to and subscribed before me this 31st day of March, 1922.

H. J. Hammond.

My commission expires Oct. 14, 1925.

Pulling Down Labor Costs

In seeking a decisive way to lower labor costs, many contractors are turning to STANDARD GRAVITY CONVEYORS.

They find that the cost of common labor is cut to the minimum and skilled labor is kept busy because they don't have to wait for materials.

This method is decidedly economical as the power costs you nothing and the upkeep is almost negligible.

STANDARD CONVEYORS are so scientifically and sturdily built that tons and tons of weight can travel over them before they show any signs of wear.

Write for booklet B. C. R.

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New York
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Chicago
549 W. Washington St.

Cleveland, O.
225 Elec. Bldg.

Milwaukee
606 Security Bldg.

Representatives in all principal cities

"HURRICANE"

AUTOMATIC

Stove Rooms and Mangles For Clay and Porcelain

FEED END OF "HURRICANE" AUTOMATIC STOVE ROOM

Stove Rooms Individually Designed.
That —Reduce Labor and Time.
Will —Improve Quality of Ware.
Mean —Uniformity of Drying.
Greater —Reduction of Floor Space.
Profits —Means Successful Business.

BUILDING COSTS ARE HIGH

By using "Hurricane" Stove Rooms you may not have to build that contemplated addition to your plant. Products dried on "Hurricane" Dryers are superior and much time and labor are saved, thus reducing costs.

Automatic and Truck Systems

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The Master Workman has a Master Mind—he knows perfectly his own merit, and in order to increase his knowledge, he studies the methods of other men— in the only way that he can—in books. If you would be master of your work you must read and know what others know.

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Clay Plant Construction and Operation	4.00
Clays: Their Occurrence, Properties and Uses	5.00
Clayworkers' Handbook	6.50
Clay Working Problems	1.50
Directory of Dealers	.50
Engines and Boilers	1.50
Engineering for Land Drainage	2.50
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Powdered Coal as a Fuel	4.50
Practical Farm Drainage	1.75
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Among Our Advertisers

Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

PRINTER "IN BAD" AGAIN

How many times you have toiled over the proofs of your circular or advertisement to guard against errors, and heaved a sigh of relief when the last O. K. had been given.

Then when the finished job was delivered how proudly you started to look thru a copy. Your pleasure is short lived, however. Almost immediately you contract heart disease—after all your care—some one has blundered.

Well, the foregoing describes just how The Eagle Iron Works Co. felt when they viewed their ad appearing on the inside front cover of March 21 Brick and Clay Record.

All that the printer had done was to transpose a few innocent little letters, when registering the color form, but oh, what a change in meaning.

You've heard the expression "From the sublime to the ridiculous." Your use of the Eagle Shale Planer could hardly improve the quality of your "wear," while it does have that effect on your "ware."

The Eagle Iron Works, Des Moines, Iowa, can give you full particulars.

⁂

During the last three months there have been a number of changes in the sales organization of the Celite Products Co. The policy of this company has been that increased business could be secured only by direct concentrated effort, and with this object, branch offices have recently been established in Boston, Buffalo, Cincinnati and Minneapolis. F. W. Emerson has been placed in charge of the Boston office, W. D. Van Arnam is district manager for Buffalo territory, L. M. Lindsey is in charge of the Cincinnati office, and E. R. LaBelle is at Minneapolis. A change has also been made in their New Orleans office and J. C Etheredge is now district manager for this territory.

⁂

Two new bulletins have been issued by The Thew Shovel Co., Lorain, Ohio, No. 501 being devoted to Type O cranes, steam, gasoline and electric, while Bulletin No. 201 describes Type O electrical shovel.

⁂

The use of a rotary clay dryer will often overcome difficulties in connection with the handling of wet limey clays. George Krick gave a very good account of such a use in his paper at the Indianapolis Convention.

The Bonnot Co., Canton, Ohio, advise that their wide experience with the drying of various clays is at the service of clay products manufacturers now, or whenever problems of this nature arise.

Mechanically, the Bonnot dryer represents the improvements and refinements of twenty years' marketing. Such parts as require replacement are easily renewed, and the whole dryer has proven satisfactory to the trade.

Your inquiries will be at all times promptly and carefully handled.

⁂

In line with the reduction in prices, which are in evidence, the Des Moines Glove & Mfg. Co., Des Moines, Ia. announce that they have reduced the prices on their mittens and hand pads, to less than pre war prices.

Many manufacturers of clay products have found it greatly to their advantage to furnish these strong, durable mittens or pads to their workmen, giving ample hand protection.

⁂

Effective April 1, the Pittsburgh office of Hendrick Manufacturing Co., Carbondale, Pa., will be located at 544 Union Arcade Bldg. They manufacture a complete line of screens for all purposes, and also elevator buckets, conveyor trough and flights, stacks, tanks, general sheet and light structural work, light and heavy steel plate construction.

BRICK and CLAY RECORD

Established 1892. Now in its twenty-ninth year.

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By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago

Branch Offices
New York Cleveland Kansas City

Address all communications to home office

Chicago, May 2, 1922
Vol. 60 No. 9

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Standards of Practice for Business Publications

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep **his reading** columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

A Few Thoughts Worth Considering

WITH the present coal strike in progress with its almost complete tie-up of coal production, and with the knowledge of the power of the railroad unions, one shudders at the thought of what might happen in the clay products industry if its workmen were organized on a similar scale.

The coal industry generally speaking, has no competition. Hence its business will accumulate during a strike, and it will later largely make up for lost time.

Likewise, if a railroad strike should ever occur, the little competition offered by motor trucks and water transportation would not affect vitally, the future business of the railroads. As in the coal industry, orders would accumulate and the railroads would simply make up for lost time when they again started to operate.

But what would happen in the clay products industry? Substitute materials and competitors are more strategically situated in the field the clay products industry serves. Hence, if the industry were completely unionized and the unions were powerful enough to shut it up for any length of time, the clay business would suffer considerably.

The accumulated orders would be small. The activity of other industries that attempt to serve the same field would enable those industries to simply gobble up the business that ordinarily would go to the clay industry.

Thousands of dollars worth of advertising that had been spent by the clay products industry would be wasted. The industry would be throttled. Its market would be narrowed.

There are those in the industry who assure us that sinister forces are at hand attempting to organize a powerful closed shop labor organization in the clay manufacturing business. If such came to pass, and the heads of the labor organization were broaded-minded, fair and responsible, there might perhaps be no harm done. But on the other hand, if the leaders were such as seem to be common among the labor unions these days, we shudder at the possibility of what might happen.

* * *

More Apprentices Must Be Obtained

ANY HOPES that there might be a building boom of tremendous volume, are now being quashed. A limitation is being placed upon the amount of building materials that can be consumed, by the labor available to assemble them into a structure.

Already there is a reaction in the East in speculative housing because of the impossibility to hire building labor. Prices being paid today for plasterers and brick layers are sometimes 50 per cent, more than the official scale. The same situation is true in Chicago.

Something must be done at once to remedy this condition. Unfortunately, in many instances it hits the clay products industry harder than any other. There is a nation-wide shortage of bricklayers.

The responsibility of the shortage of apprentices is not directly on the unions as much as has been assumed. Many of the unions openly favor the use of apprentices, because their ranks are becoming depleted. They know that many of their members are slowing up as the years pass. Some of the unions need more men to increase their income.

It has been asserted that the fault lies principally with the employer, who is unwilling to assume the responsibility of teaching and properly caring for an apprentice. Moreover, it has been stated that there have been many boys ready and willing to start to learn a trade, but there were no employers willing to take them.

It is imperative that trade associations and individual contractors must and alone can solve the problem of apprentices, and that the subject is one that cannot be deferred or delayed any longer.

* * *

Dig Up Your Old Inquiries

MEMBERS of the various trade associations in the clay industry directly interested in building and construction ought to get out their complete list of inquiries that have been accumulated ever since the respective advertising campaigns in the different branches were started. Some of these inquiries were received a year and even two years ago. At the time of the inquiry many of the prospects were perhaps only lukewarm. They did not have the money to build. They felt that they could wait another year. They decided that this year would be a better year to build. Or, they delayed building for some other reason.

These prospects in many cases are now ripe. These old lists will be found to be one of the most valuable lists available. If you did not save these lists, by all means start now, and keep a complete record of every inquiry. Some of them will ripen into good live prospects next year. But if you have your old lists available, and have not made use of them, by all means do so now.

* * *

The Real Issues of the Coal Strike

THE FACT that thus far the coal strike seems to be lightly regarded by the public, and to have had little effect on business, should not blind us to the certainty that its long continuance would be a disaster of first-class magnitude.

It is true that there is still considerable coal in storage, and that some of the non-union mines are reporting "no orders." It is certain to happen, however, that some consumers will find themselves facing a coal famine while others are still well supplied, and their efforts to protect themselves will tend to force up prices and to foster a general feeling of uneasiness that may easily assume panic proportions and result in the closing up of some industrial establishments and placing a hurdle in the path of business improvements.

The present strike hinges on two fundamental points: Shall the wages of miners be reduced in conformity with wages of all other classes of labor in order that coal may be produced at a cost which will permit it to play its very necessary part in the general scheme of reconstruction?

Shall the United Mine Workers be permitted thru sheer organized numerical strength to exercise complete control over the coal industry by means of a national wage agreement which would ignore the specific needs of the various coal fields, under the constantly changing economic conditions?

Other items that have been mentioned are simply corollaries to these major issues. These are the real issues, and to prevent another business depression, speedy action should be taken to secure an early settlement of the coal strike on a basis that will act as a tonic to business.

Cleveland Show an Unqualified Wonder

America's Greatest Building Exposition—Directed by Ralph P. Stoddard—Enabled Hundreds of Thousands to Make Definite Home Building Plans—Clay Products Play a Conspicuous Part

THE CLEVELAND home exhibition, officially called the American Building Exposition, deserves that name, and it would scarcely be possible to exaggerate its size, brilliance of setting, features and arrangements, nor the tremendous success it has achieved in every way.

The show, which had been in preparation nearly a year and had been postponed owing to delays in finishing the new Cleveland Auditorium, instantly became the Mecca for crowds which had been gathering the past few months and which swarmed into the mammoth hall. It is probably the biggest building show ever held in this country or elsewhere, and probably the largest industrial extravaganza ever staged anywhere. It ran for 11 days, commencing Saturday, April 22 and ending Tuesday, May 2. Over 200,000 people attended the exposition during this interval.

Seven Points of Success

The show, which was an unqualified wonder, was a success from every point of view.

(1) In attendance. There was a continuous procession of Clevelanders and nearby residents from 11 A. M. to late at night. The crowd ranged from 15,000 to 30,000 daily, and it seemed that each succeeding night was outdoing its predecessor.

(2) In merchandising results. Literally thousands of orders and contracts were cinched by realtors, contractors, building loan firms, material dealers, manufacturers of roofing, builders' hardware, home appliances, office equipment, and so forth. A registration list was kept which was given to each exhibitor. This list contained the names of thousands of earnest home builders and comprised a very formidable mailing list for all who exhibited material that goes into a home.

(3) In representative participation. Literally everything and everybody legitimately related to the construction industry and home equipment was on the job in some sort of exhibit. These included very elaborate architectural displays made of life size houses of brick, cement (portions), stucco and frame, complete models of entire city residence districts and dozens of lesser features of which models of products and devices were on inspection.

Clay Products Get Considerable Publicity

The architectural exhibit was under the auspices of the Cleveland Chapter, American Institute of Architects, and cost $30,000. Here were shown pictures and plans which could be reproduced, from the most modest project to the highest type of home construction.

By far the outstanding features of the show were the exhibits of the Supply Dealers Board of Cleveland, representing the combined face brick and building supplies distributing interests, and that of the Cleveland Builders Supply & Brick Co. These two groups aimed to emphasize in every way the value of fireproof construction. The exhibit of the Supply Dealers Board included two houses, one of brick and the other of stucco, each 20 feet long and 12 feet wide, with a pergola between the two where prospects were listed by groups of members from the Board.

The display of the Cleveland Builders Supply & Brick Co. comprised two houses, one showing the actual use of the Ideal wall of common brick, a one-story structure, and the other a 1½-story house in which face brick and stucco were used. Both of these exhibits showed every kind of material either manufactured or distributed by these groups. They offered splendid publicity for all clay products from brick to tile, including common, face and fire brick, hollow building and roofing tile and so forth.

Exhibits Constructed in Fast Time

Of particular interest to those who enter an exposition of this kind in other cities must be the

Beautiful Exhibit of the Supply Dealers Board of Cleveland Showing All Kinds of Clay Products Handled by Members. Photograph by Ohio Commercial Photograph Co.

equipment of these two exhibits in the limited time available to construct. The first brick in the big house of the Cleveland Builders Supply & Brick Co. exhibit was laid at nine A. M. on Tuesday, April 18, and the last mason work was completed on Friday evening, April 21. The building of the Ideal wall house was accomplished in less time. Here also were several sectional views built as well. The Ideal wall construction was under the direct supervision of William Carver, architect of the Common Brick Manufacturers' Association. 60 masons were employed to carry on this work.

Unique Buying Power Chart of a Dime

No literature was used by the Cleveland Builders Supply & Brick Co., but this was not needed, since all salesmen took turns to interest personally the prospects that appeared at the exhibit. The whole was embellished with floral and landscape work supplied by a local florist.

More effective than any number of printed words was the comparison of the value of ten cents. A board was erected inside the big house. Here was told what ten cents would buy—a cigar, a loaf of bread, four face brick, seven common brick, three hollow tile, a piece of 2x4 33 inches long, a piece of siding 18 inches long, and so on. This novelty was conceived by E. A. Roberts, publicity director of the Cleveland Builders Supply & Brick Co., who was in general charge of the affair, the whole being recognized by Cleveland building officials as a gigantic advertising project.

The speed of construction of the houses built by the Supply Dealers Board of Cleveland was even greater than that of the Cleveland Builders Supply & Brick Co. Close to 40 dealers in the Board supplied the material and saw to it that it got on the job. This work was under the direction of H. F. Kemper of the Kemper Material Co. The architectural work and supervision of construction was done by H. T. Jeffery, Cleveland architect, assisted by O. R. Leach, sales manager and architect for the Hydraulic-Press Brick Co.

Use 100 Kinds of Brick in One House

Practically every manufacturer of materials, with which any member of the Board has dealings, supplied some material, and nearly all contributed additional funds to aid the work. About 100 kinds of face brick were used in the brick house, a feature of which was a conglomerate mass of brick that made up the fireplace, mantel and chimney.

The Bowen Brick Sales Co. had a separate exhibit, in which a large panel of some 20 different kinds of face brick were used, surmounted by a 20 inch plaque of terra cotta, bearing a Cadillac coat of arms. In charge were Dana G. Bowen, R. E. Lane and A. B. Lewis of the Bowen firm.

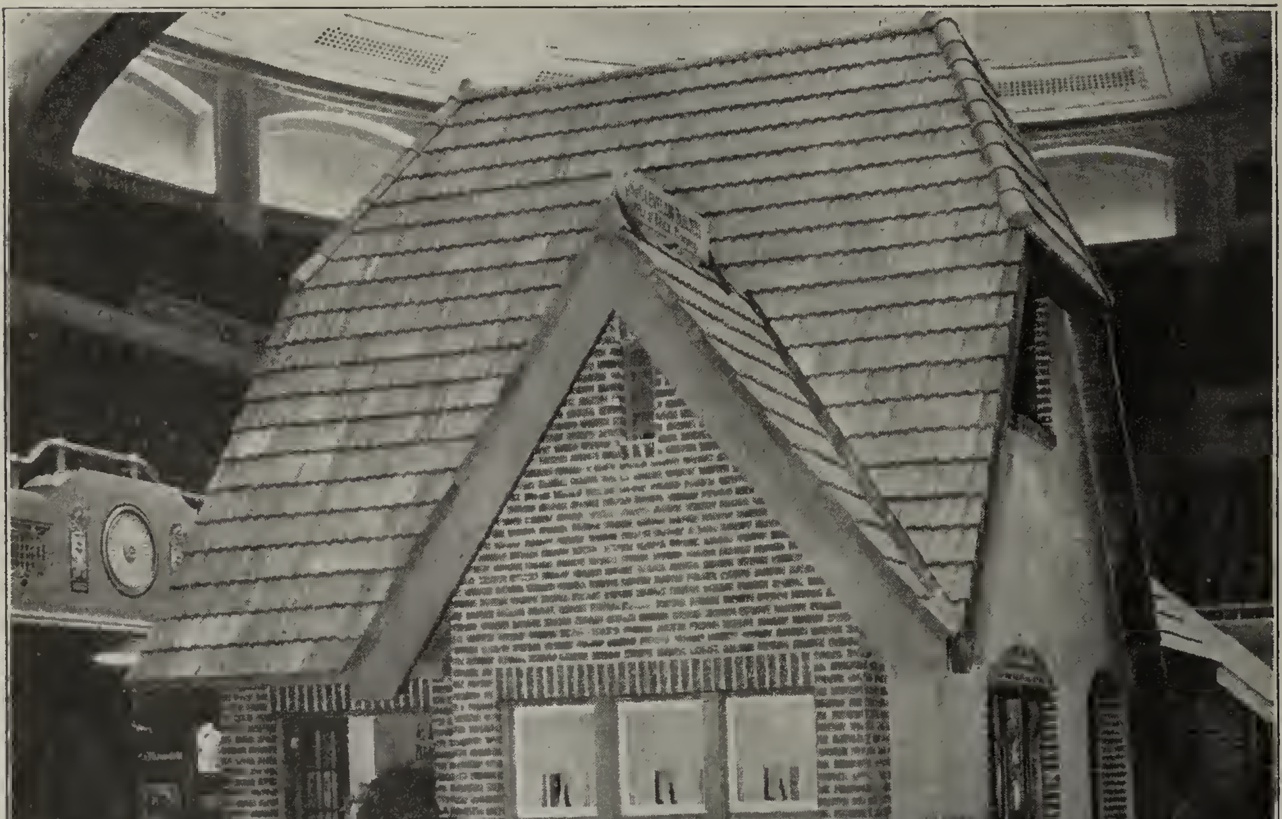
Besides clay products exhibits, there were exhibits of lumber companies, cement companies, real estate concerns, electric companies and innumerable displays pertaining to efficient home management, such as washing machines, electrical equipment and the like. Space does not permit description of these exhibits.

Shows Success from Other Standpoints

(4) In general popular effect upon the community. The show cannot fail to prove a very vital influence upon increased home building in all the Cleveland section. The newspapers gave it lavish space, its advertising was everywhere, it actually dominated the public eye in Cleveland.

(5) In the remarkable spirit and applied expression of cooperation of all elements with the absolute minimum of friction or jealousy. Splendid cooperation by the different interests identified with the building was manifested in the comprehensive plan for winning instant action from the prospective home builder this year. In the exposition were allotment factors, finance factors, and architectural exhibits, these three combining the first steps toward actual construction with the scores of material interests bringing up the rear.

Thru the united efforts of saving and loan associations and banks, which have loosened up on loans for construction, the financing problem has been made easier for the prospective builder and was fully explained to him at the show.


The CLEVELAND BUILDERS SUPPLY & BRICK Company
OHIO COMMERCIAL PHOTOGRAPH

The Cleveland Builders Supply & Brick Co.'s Big Exhibit. In the Background of the Picture is an Ideal Wall House Which is Also Part of the Exhibit. Photograph by Ohio Commercial Photograph Co.

Management Deserves Great Credit

(6) In size and arrangement. The acual space in use and occupied by bona fide, clever and effective exhibit was practically twice that used by the Chicago show. It actually was three complete shows in one, but all so arranged that every visitor was led irresistibly from one to the next—the main floor of, first, the big Auditorium (seating capacity for big gatherings, 12,500), thence to a lower level, another immense area packed with additional exhibit features and two immense corridors, each around three sides of the building, a distance of five ordinary city blocks

each, a grand total of 74,000 square feet of exhibit space altogether in use, with 300 different exhibits.

(7) In the generalship of the show. While Ralph P. Stoddard, secretary-manager of the Common Brick Manufacturers' Association, was in many ways the unassuming but masterful spirit behind the whole affair, it was the product of a fine group of big men, and the leaders of organized construction in the city of Cleveland.

Operated on Non-Profit Basis

The list of officers and directors is as follows: managing director, Ralph P. Stoddard; assistant manager, R. G. Collier; superintendent, Herbert Mathews; president, George A. Rutherford; vice-president, George S. Milner; treasurer, F. P. Potter; secretary, Edward A. Roberts; directors, Carl R. Brown, George Donley, A. C. Smith, E. T. Holmes, H. B. McGrath, T. G. Mouat, J. V. O'Brien, A. O. Preyer, A. E. Riester, W. T. Rossiter, H. T. Jeffery.

RALPH P. STODDARD

In addition to these officials there was an advisory committee composed of men prominent in Cleveland and allied to building construction.

The show was sponsored by the Builders' Exchange of Cleveland, and was conducted upon a strictly non-profit basis, the net earnings being rebated pro rata to the exhibitors. The whole project was promoted purely as a stimulator of building, and judging by the interest and orders received, it was a huge success from this standpoint as well as from every other point of view.

* * *

REVISE FORDNEY TARIFF BILL

Formal action has been taken by the Senate Finance Committee toward the upward revision of tariff rates. In the final bill which has been prepared rates have been shifted and the basis of ad valorem duties has been changed from that of the American value, as proposed by the house under the Fordney bill, back to the present foreign valuation basis. It is estimated that the average protection afforded by the bill will be slightly greater than under the former Payne-Aldrich law. The bill in general is intended to provide greater protection for American industries than the present Underwood act.

Duties on earthenware and crockery are changed from 25 per cent. American valuation on undecorated, to 45 per cent., foreign valuation, and from 28 to 50 per cent. on decorated. Duties on chinaware are changed from 35 to 60 per cent. on undecorated and from 40 to 70 per cent. on decorated. These rates are somewhat higher than in the Payne-Aldrich law.

Much greater protection than given at any time heretofore is provided for the new glass manufacturing industries, which were built up during the war when the German product was cut off. A rate of 75 per cent. is provided for chemical, pharmaceutical, surgical, and similar articles of glass, regardless of whether used for experimental purposes in hospitals or colleges or not. Rates of from 50 to 70 per cent. are provided on other kinds of glass.

Duties on magnesite, now on the free list, were reduced considerably from those in the Fordney bill, as a result of protests from the steel industry. The rate on dead burned magnesite, used in brick in steel furnaces, was made four-tenths of one cent a pound, or the equivalent of $8 a net ton, instead of three-fourths of one cent a pound, or $15 a ton, as in the Fordney bill.

There is little possibility that the bill will be passed by the Senate before June at the earliest, which may make its enactment into law possible by the end of July.

* * *

SAYS ROLLED BRICK ROAD IS IDEAL

Six inches of rolled rock base, an inch sand cushion and a brick surface—such was the ideal road for heavy traffic advocated before the Members' Forum of the Evansville, Ind., Chamber of Commerce recently by Will P. Blair of Cleveland, Ohio, engineer associated with the National Paving Brick Manufacturers' Association. It was the second of the forum's series on road materials.

Altho the state highway commission insists on a six-inch concrete base for standard brick roads, Mr. Blair declared that experience and exhaustive tests conducted recently had shown that a rolled stone base brings the road down to the cost of other hard-surface materials. He declared that Edgar County, Ill., had built 45 miles of brick roads.

"Three years ago we knew nothing about road building, about capillary attraction, drainage and soil conditions," Mr. Blair said. "We are just beginning to learn. I just furnished Gov. McCray with a message from the highway department of Ohio, pointing out that 87 miles had been built last year and that 50 per cent. of Ohio's roads would be constructed of the rolled base type this year. I certainly would not build all roads of brick, if I had the power to do so. But I certainly would not think of anything but brick for thru roads, that must stand an enormous traffic. I know brick laid on stone that have given tremendous service for 30 years and from their appearance will continue to give service for 20 more years."

Mr. Blair constructed the brick speedway at Indianapolis—a job that, notwithstanding the tremendous assaults, would last, he said, 200 years.

* * *

TWO MORE SHOPE BRICK PLANTS

The incorporation of two more companies who will manufacture the Shope concrete brick has been announced recently. The Empire Sand & Gravel Co. of Wichita, Kan., will build a plant with a capacity of 15,000 brick daily and the Independent Shope Brick Co. at Waco, Tex., has been organized with a capital stock of $60,000.

* * *

Railroads recently announced a reduction of 10 to 30 cents a ton on paving brick to all all Kansas points.

N. C. P. I. A. in Business to Stay

Annual Meeting in Chicago Shows Growth and Sound Condition of Youthful Organization—Anticipate Great Increase in Membership

PRESIDENTS and general managers of some of the nation's largest clay manufacturing concerns—companies that operate a score or more plants and employ thousands of workmen, were present at the annual meeting of the National Clay Products Industries Association, which was held at the Congress Hotel, Chicago, Ill., on Friday, April 21. The meeting was short, to the point, but of considerable interest, and it proved the necessity of maintaining such an organization as the National Clay Products Industries Association. Several non-members present at the meeting indicated their interest to affiliate.

This association, which is but slightly more than a year old, and has passed thru not only a period of business depression but an interval very much unfavorable for its maintenance, is to be congratulated upon its present excellent condition. The report of the Commissioner, which was complete in detail, and which showed considerable activity and much undertaking by the association during its brief career, was a revelation to those in attendance of the importance and need for the organization. It showed a substantial reserve fund built up even during these times.

Commissioner Jung, in his annual report, proved beyond doubt to those present the great service that could be and has been given by the association which numbers approximately two hundred plant units. He pleaded for a larger membership which would make the organization more effective and increase its value to the industry. Even during the past months of unfavorable conditions, the National Clay Products Industries Association has shown more than ordinary growth, with many ready to join, which indicates its great possibilities.

Tells of Association's Service

The retiring president read a very excellent paper which he had prepared on the insurance feature of the association, and pointed out in a very able manner the excellent service that it could and was rendering the clay products industry. It is very likely that this address will be bulletined and mailed to the entire membership.

John M. Glenn, secretary of the Illinois Manufacturers' Association, who had a wide experience as newspaper reporter, publisher and secretary of a manufacturers' association, which brought him closely in touch with labor matters and with legislation, held his audience spellbound during his excellent talk. He covered a wide number of subjects taken from his repertoire of practical experience, and each one of them was of considerable interest, and brought home the point of the need for such an organization in the industry to render the service given by the National Clay Products Industries Association.

The movement is growing continually stronger and the officers feel certain that it will only be a short time before the considerable majority of the production of clay ware in the United States will hold membership in the association.

The officers for the coming year were elected by unanimous vote and constitute some of the best known figures in the clay industry.

* * *

Indisputable Evidence That Brick Advertising Pays

PREVIOUS to several years ago clay products had never been nationally advertised. Manufacturers did not think a product such as burned clay could be successfully merchandised with the aid of an advertising campaign such as other commodities, like clothes, collars, cosmetics, rubber tires, automobiles, and so forth. Moreover, a good many clay manufacturers were not convinced of the value of judicious advertising.

Since the advent of clay product advertising, there has been a noticeable change in the public's conception of burned clay material. That these are facts can easily be proven. Because more tangible evidence, by reason of the nature of the product, can be seen with face brick, we shall show by reference to this product, the proof of the statement that brick advertising pays.

As intimated in the beginning, up to but a few years ago, face brick had never been advertised. But also previous to the time that face brick was advertised, there were no inquiries for information concerning the use of the product—no questions as to comparative cost information—no inquiries for house designs, plans and specifications—in other words, no demand for service.

Publicity Now Greater Than Ever

There were two reasons for this situation. There was not much interest in this kind of service. Secondly, such service was not available. The great number of inquiries of the nature mentioned above received by the American Face Brick Association daily is sufficient evidence that brick advertising does pay. It is proof that the public want and require this service.

Never in the history of the brick industry has the word brick used up so much printers' ink as recently. Previous to the time that advertising in behalf of brick was being conducted in the magazines, rarely, if ever, was there mentioned the word brick. Even in the stories it was always cypress or some other wood house which was part of the background. Brick had not made an impression upon the author's mind, or rather, the public was so little receptive to it that the author found it best not to use this term.

More important than this, however, is the fact that never was there any space devoted to the description of brick homes, such as is now quite customary. National magazines—especially a typical woman's paper, devote a certain space to home building, interior decoration, and so forth. In the April and May issues of the Woman's Home Companion are two especially fine articles, each giving plans for brick houses, together with a general description of the home.

Praises Brick Construction

We quote from the April number the following:

"The difference in comparative structural costs is one of the first questions the prospective home builder usually has to have settled. Of course, a brick house really should cost more than a frame one, because it is better, safer, will last longer, gives more comfort, costs less to maintain, less to insure, and less to keep warm in cold weather, and can be sold at a greater proportion of its original cost at any period of its history than a frame house.

"America is rapidly approaching the day when the exterior walls of its houses will be erected of permanent fire-resisting materials, and in this classification brick, by reason of its great improvements in manufacture, has come to be by far the most accessible, as well as one of the most economical and beautiful of materials.

"Brick are now made in every part of the United States from local clay. Being a natural product, the elements, such as wind and rain, cold and heat, have no effect on them, and therefore they do not have to be painted or repaired.

"While the variation in the cost of labor and materials in different sections of the country makes any general statement as to comparative costs of doubtful value, I think it is safe to say that the first cost of a brick structure is about five or six per cent. higher than the cost of a frame house. This difference is more than made up within two or three years by the................"

But this is sufficient. The remainder can be found on page 30 of the above issue.

Show Brick House Complete

The May issue shows another small brick house reproduced in full color, with a sketch of a furnished living room in color also. Besides this, there is a complete description of all the rooms and complete working plans and specifications are furnished by the journal to any of its readers at a nominal charge. Moreover, approximate estimates of the cost of construction in different sections of the country can also be obtained from the Woman's Home Companion. This is what it says with regard to brick:

"It is unfortunate that thruout the country there is a mistaken idea that the difference between permanent fire-resisting construction and frame is so considerable.

"As a matter of fact, in most localities, this difference amounts to about six per cent. of the total cost of the frame structure—a difference which is made up within two or three years, by the saving from the greater depreciation, higher insurance, and continued cost of painting and repairing of the frame building."

The above articles are invaluable to the industry. The Woman's Home Companion probably reaches a million people, and the articles being in the editorial section, catch the attention of every reader. To the face brick industry, these articles are worth considerable money. It is hard to put any definite value on them, but we venture to say that for similar effect they are equivalent to advertising that would cost fully a hundred thousand dollars.

House and Garden Praises Brick

And if you will turn to page 68 of the April issue of House and Garden, you will find there an excellent article on brick patterns, mortar joints and bonds, together with illustrations. From this valuable article we quote:

"It is impossible to be interested in ancient and mediaeval architecture without being arrested by the miraculous power of brick to create picturesque atmosphere, whether in an old Babylonian gate, a Moslem tower, or a Tudor battlemented castle, on down to the type of architecture known as the Colonial. No doubt the languorous Cleopatra from her barge on the Nile indolently watched the forming and baking of brick in the brilliant Egyptian sunlight. And kings were the patrons of these Egyptian brick kilns, even the great Pharaoh had an interest in brickmaking on the Nile and had his name stamped on all the brick manufactured in his home town. Brickmaking also received the royal patronage of Babylon. On one of the old tombs 1,500 B. C. is the naive statement, "Disparage me not, by comparing me with pyramids built of stone, I am as superior to them, as Ammon to the rest of the deities."

All this tends to build good will for brick. With such articles being published together with the magazine advertising, local newspaper advertising campaigns, face brick exhibits at own-your-home expositions, it is no wonder that the public is becoming more and more interested in brick. All this publicity and recognition is directly due to the advertising campaign conducted by the A. F. B. A. and because service is available on face brick. And from now on with each effort in advertising, returns will be coming back not in arithmetical but in geometrical progression.

⁂

A. C. S. PLANS VISIT TO ENGLAND

An opportunity will be afforded members of the American Ceramic Society to visit England and inspect English ceramic plants this summer. The movement was started about a year ago, prompted by the invitation of the British Society of Glass Technology, and negotiations have been going on with England with regard to the reception of those of the A. C. S. who are interested in things other than glass. As a result, it has been announced definitely that the refractories group will be welcome, and it is hoped to get definite information regarding the other groups in the near future. Reservations have been made on the Cunard liner Aquitania, sailing from New York on August 22, 1922, for the accommodation of about 40 persons. The rate is $275 plus $5 tax per passenger, two persons per cabin, New York to Southampton. A small group of about ten have already signified their intention of going, but in order to secure these rates it is necessary that a party of at least 25 is secured. Reservations must be made before June 29, and it will therefore be necessary to inform the committee of the American Ceramic Society not later than June 1. Anyone interested can secure complete information from E. Ward Tillotson, Mellon Institute, Pittsburgh.

⁂

DRAIN TILE SPECIFICATIONS APPROVED

The American Engineering Standards Committee has approved as Tentative American Standard the Specifications for Drain Tile (C4-21) of the American Society for Testing Materials.

The comparatively recent use, on an extensive scale, of very large drain tile in public drainage works for reclaiming wet lands had brought about the unexpected discovery that these large drain tile were quite subject to cracking in the ditch under the weight of the ditch refilling. Also, the extensive production of concrete drain tile, and the resulting controversy between clay tile and concrete tile producers as to the merits of the new material made it urgent that additional data be secured. The specifications were based on a series of investigations covering methods of tests, the determination of desired quality and durability of drain tile, and a study of methods of manufacture and of construction and field specifications.

Nineteen standards have now been approved by the American Engineering Standards Committee of which four have been approved as "American Standard." 14 as "Tentative American Standard" and one as "Recommended American Practice."

⁂

PUBLISHES BOOKLETS ON CALIFORNIA HOMES

Three booklets showing California homes and bungalows are being published by E. W. Stillwell & Co. of Los Angeles, Cal. The titles of these booklets are: "The New Colonials," showing a great many houses of the colonial type and some a mixture of the California bungalow and colonial style; "Representative California Homes," and "West Coast Bungalows." These booklets can be had for $1 by applying to E. W. Stillwell & Co.

Business Briefs and Trend

SIGNS INDICATE BUSINESS IS BETTER

Price-index numbers so far available show a tendency towards a slightly lower level in March. Bradstreet's index dropped one point. The retail food price dropped from 142 to 139, the lowest point so far recorded. Farm prices, on the other hand, increased, thus continuing to narrow the gap between the farmer's buying level and his selling level.

Distribution movements were more favorable in March. Sales by the two largest mail-order houses increased from $18,198,000 to $23,832,000, while chain-store sales were universally larger.

Bank clearings and debits to individual accounts were much larger than either the previous month or a year ago. Interest rates continued to decline. The recent successful flotation of U. S. Treasury certificates bearing only 3½ per cent. interest is further evidence of the available stocks of loanable money.

Foreign exchange quotations, on the whole, showed a favorable increase in March. With the exception of German and Swiss money, all European exchanges advanced; far Eastern monies tended to be cheaper.

New York stock and bond sales were very much larger than for any month since the early part of 1920. Prices also advanced, with the averages exceeding those of any month in 1921. These facts indicate that the stock exchange has confidence in the future and expects better things in the coming months.

⁂

COST OF EIGHT TYPES OF PAVEMENTS

The diagram which is shown on this page shows the cost per square yard of laying eight different kinds of pavement in nine different sections of the country on some 12,000 miles of highway completed to last December, with the assistance of federal aid grants, under the jurisdiction of the Bureau of Public Roads.

The cost of each pavement varies considerably among the different geographical districts, the most uniform in this respect being plain concrete. As might be expected, sand and clay road is the cheapest and brick the most expensive. Unfortunately, the type of brick road is not specified in this chart, which was prepared by Index.

With respect to average cost, bituminous concrete, plain concrete and reinforced concrete are very nearly on a par. It is not true, however, that all pavement which is cheapest in one section is cheapest in all. For instance, reinforced concrete is cheaper than plain concrete in the West, South Central and Pacific districts, but more expensive in the five other districts. While in the West South Central district brick pavement is cheaper than either one of the three kinds of concrete pavement, in the other four districts in which it is used brick is the most expensive.

⁂

UNEMPLOYMENT FIGURES DOWN

In the last 30 days employment figures have shown a decided and continued upward trend in all sections of the country. A recent bulletin from the President's conference on unemployment, based on figures from the United States employment service, states that for every 100 jobs available there are now 160 applicants, as against 226 in January.

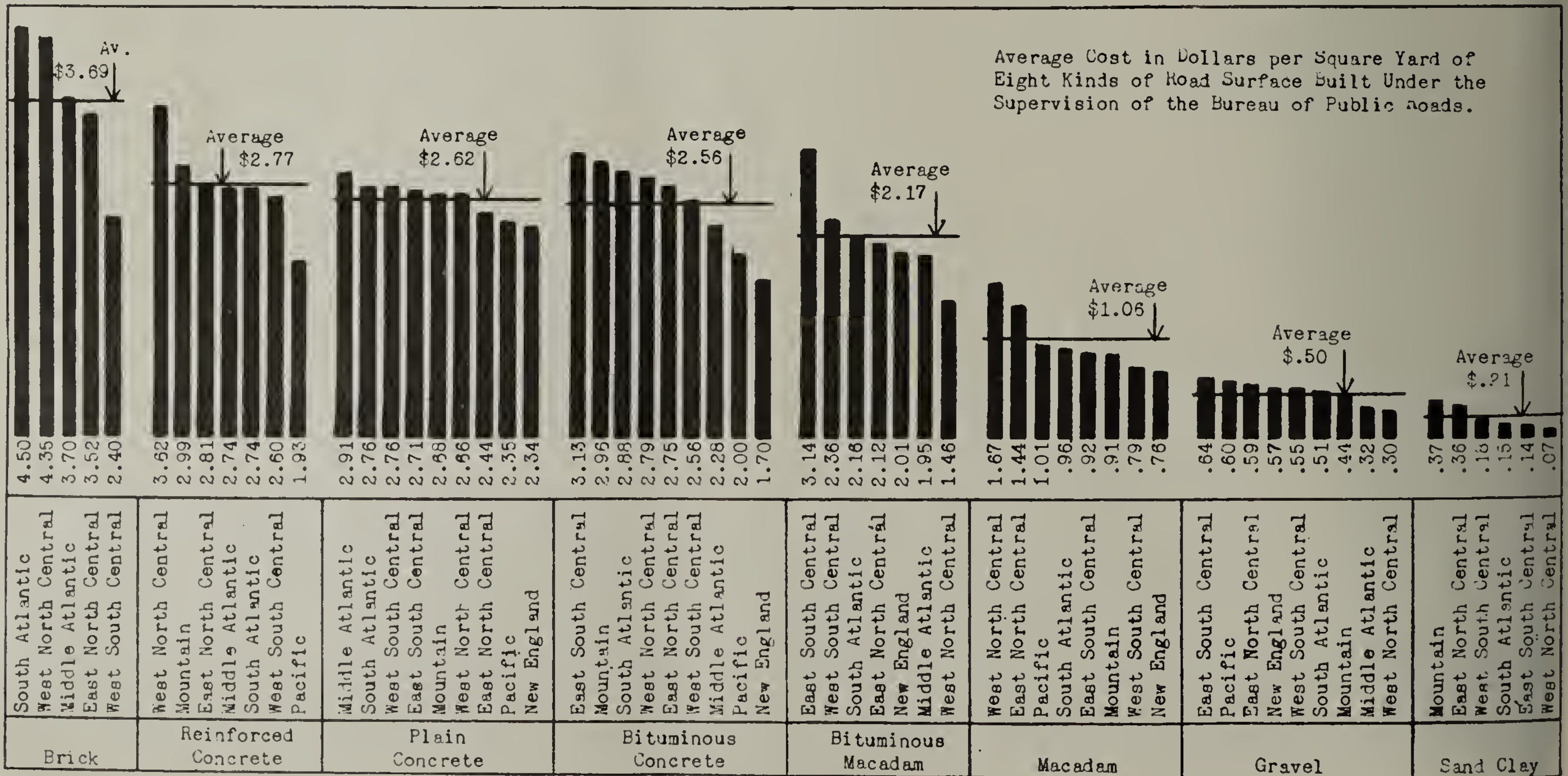
Based on an estimate of 3,500,000 previously jobless, this means employment for 630,000 individuals. In January there were 38 applicants placed out of every 100. For the first week in April the number has gone up to 50.

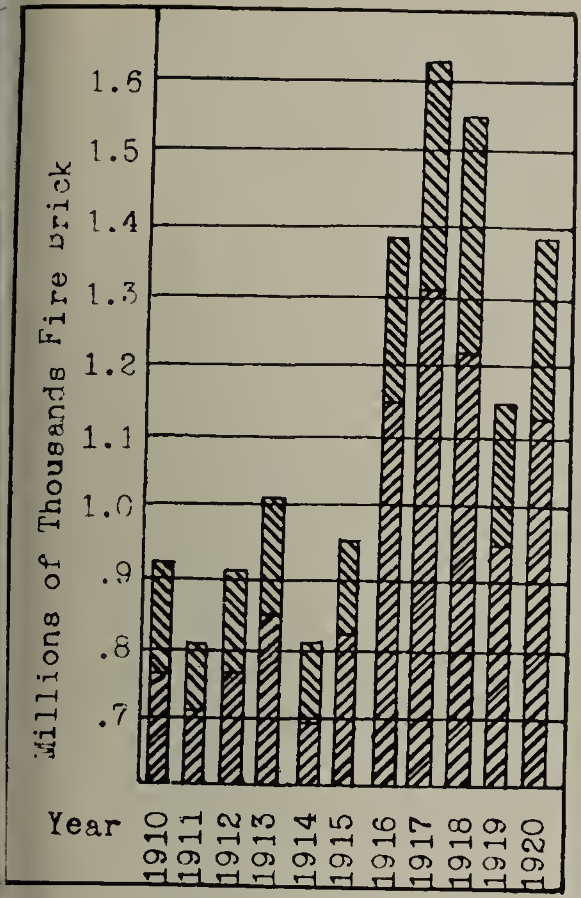
⁂

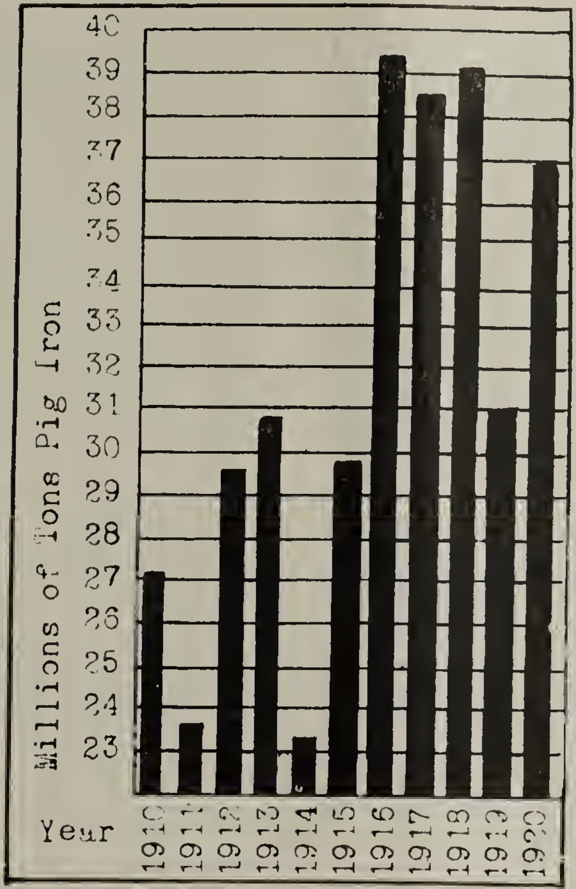
COMPARISON OF BRICK, COAL AND IRON

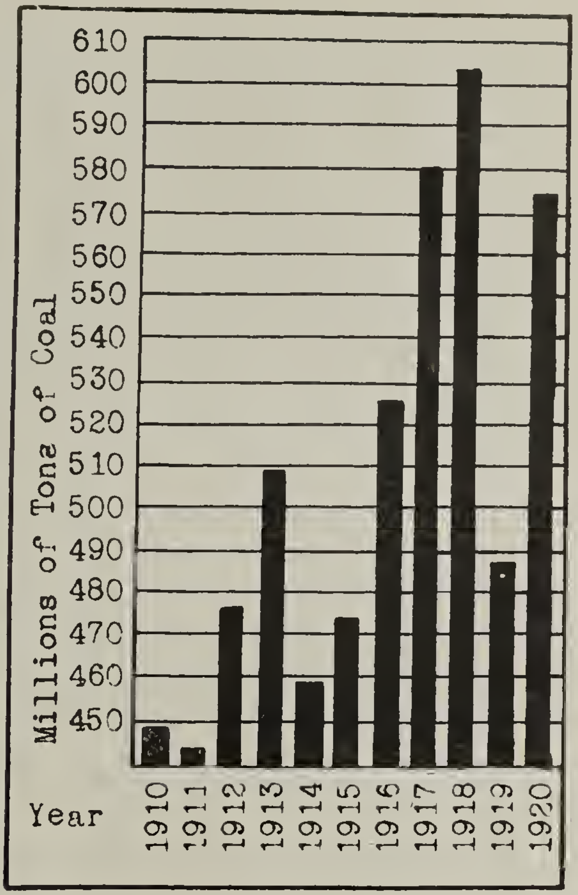
The accompanying charts, showing the annual production of fire brick, coal, and pig iron for a period of 11 years, are interesting from several points of view. The production of iron requires the use of refractories, hence it is natural to assume that the production of iron would influence the production of fire brick.

Similarly, the consumption of fuel requires refractories and it might be assumed that the quantity of fire brick required is related to the quantity of fuel consumed.









The upper portion of the chart on the left represents silica brick and the lower portion fire clay brick. It will be seen that there is only a slight similarity between the production of coal and the production of fire brick, and there is less similarity between the production of pig iron and that of fire brick.

While it is true that the domestic consumption of coal does not require the use of refractories, the consumption of fuel for domestic purposes is nearly constant, regardless of business conditions, since the purchase of coal for domestic use is dependent upon weather conditions, which are more nearly uniform from year to year, rather than the business situation. Hence, this should not influence the similarity of the charts.

* * *

BUILDING 100 PER CENT. GREATER THAN LAST YEAR

Reports of the Federal Reserve Board show that upward of $3,000,000,000 will be invested this year in the construction of new homes, apartment houses and business structures. Building operations at the present time are proceeding at a rate more than 100 per cent. greater than a year ago. It has been estimated that approximately 2,500,000 workers in the United States ire dependent upon the building industry. Consequently a universal resumption of building will do much to lessen unemployment thruout the country. Another good feature of extensive uilding operations is the resultant reduction in the cost of iving, since reduced rentals are inevitable.

* * *

HOW MUCH FREIGHT IN RETAIL PRICES?

The small proportion of the price to consumers, which is nade up of existing freight rates, appears from figures just ompiled by the Kansas City Southern Railway, says "Railroad Data" of April 14.

According to this study, the average freight cost on all maerials and supplies going into a typical brick house of six rooms, o be constructed in Philadelphia, would amount to $370 on a ouse costing $8,300.

In St. Paul, Minn., the estimated average freight charges on ll material going into a frame dwelling, costing $5,000 or 6,000, would be about $580.

Thus on the house in Philadelphia the freight charges constitute about 4½ per cent. of the total cost, and on the house in St. Paul about ten per cent.

From this it is seen that a reduction of ten per cent. on existing freight rates would mean a saving of $37 on the house in Philadelphia, and $58 on the house in St. Paul.

The present freight rates on road building material for a road costing $53,000 a mile is estimated at $1,327 or 2½ per cent. of the cost.

The Illinois Central Railroad has just issued some figures showing freight costs on all material going into a meal at Springfield, Ill., for which the hotel keeper charged $1.25. The foods used in this meal came from various states, including Iowa, Oregon, Louisiana and New York, and consisted of coffee, pepper, salt, beef, wheat, butter, peas, salmon, strawberries and sugar. The total freight charges amounted to less than 1¼ cents.

* * *

FRAME PERMITS OUTNUMBER BRICK 100 TO 1

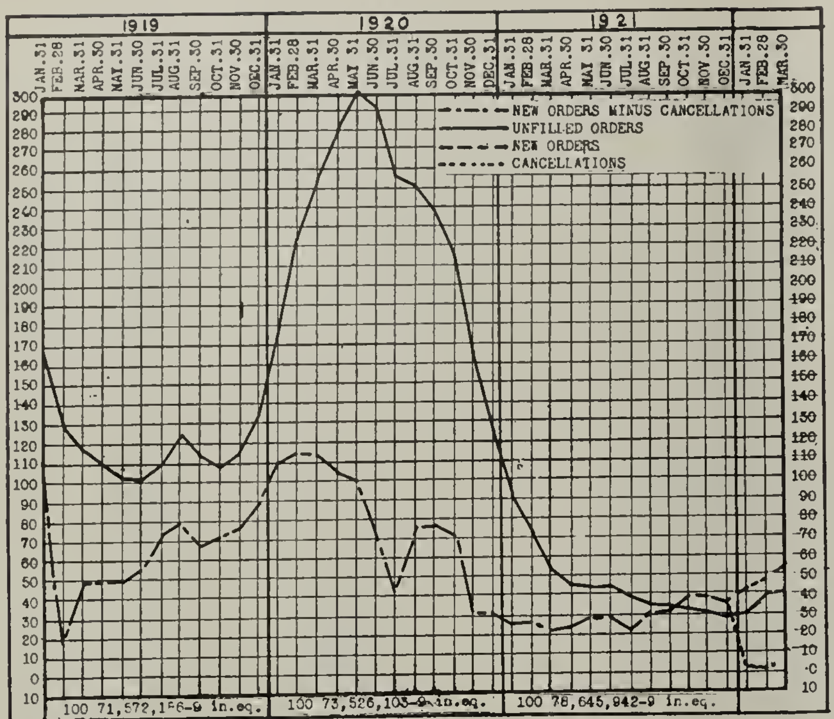
Brick and Clay Record recently conducted a survey of building permits issued in the various important cities of the country, which was printed in the April 18 issue. Some rather startling facts regarding the number of permits issued for brick structures as compared with those issued for frame buildings, were revealed. In Atlanta, Ga., during the year 1916 there were issued permits for 467 frame dwellings and none for brick dwellings. In 1920 permits for frame dwellings rose to 543 as against nine for brick, a ratio of 60 to 1. In 1921 permits for frame dwellings were almost 2½ times as great as the previous year, 1,274 being issued, whereas there were but 12 homes erected of brick in that year. In other words, less than one per cent. of the homes erected in Atlanta in 1921 were brick. This percentage was maintained in March, 1922, building department records showing 216 permits for frame dwellings issued and but two for brick.

Certainly this is a sad, sad story, and is just another indication of the vital necessity for advertising and more intensified sales efforts.

* * *

IRON AND STEEL IN BETTER CONDITION

Because of its fundamental character the iron and steel industry is very often regarded as the barometer of business conditions. The production of both pig iron and steel ingots has been on the increase since last July, but an advance of from



Potential Demand of Fire Clay Brick. The Figures on the Side of All Charts Stand for the Monthly Economical Producing Capacity. These Charts and the Two on the Bottom of the Page Were Made by the Refractories Manufacturers' Association.

25 to 30 per cent. in March, compared to February, marks by far the largest increase for any single month. Pig-iron production of 2,035,000 tons is over 600,000 greater than either the output of the month before or in March last year. This production figure has not been equaled since January, 1921.

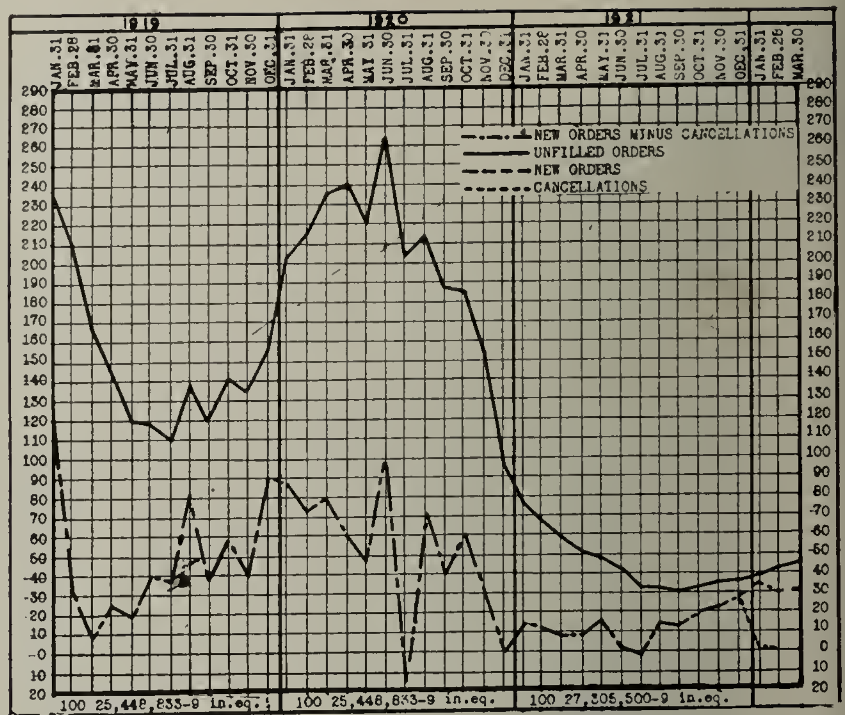
Steel-ingot output, allowing pro-rata for non-reporting firms, amounted to 2,816,000 tons or 850,000 tons more than in February, and the largest production for any month since November, 1920. The unfilled orders on the books of the U. S. Steel Corporation on March 31, 1922, amounted to 4,494,000 tons, an increase of 373,000 tons over the condition at the end of February. This is the first time the Steel Corporation's unfilled orders have shown an increase since July, 1920.

The prices of iron and steel during March showed little change from February, but this is the first month for a long time that these prices have not shown a decided drop.

* * *

MARCH BUILDING SHOWS BIG TOTALS

Building contracts awarded in the 27 northeastern states included in the F. W. Dodge Co.'s statistics, during March were valued at $293,637,000, compared to $177,472,000 in February and $164,092,000 in March a year ago. The figure for the last month was the largest recorded for any month in nearly two years. When account is taken of the decrease in the cost of building operations this means a very much larger volume of construction. The construction volume index of the Engineering News-Record increased from 100 for February to 202 for March, which gives some idea of the development in this industry.



Potential Supply of Silica Brick. See Caption Under First Chart.

The value of contracts for residential building totaled $121,551,000, an increase of nearly $50,000,000 over February and far above any figure shown in the monthly record extending back for three years. Correspondingly large increases occurred also in business and industrial buildings and in public works and public utilities.

* * *

UNIFORM SCALE RATE FOR ALL BRICK

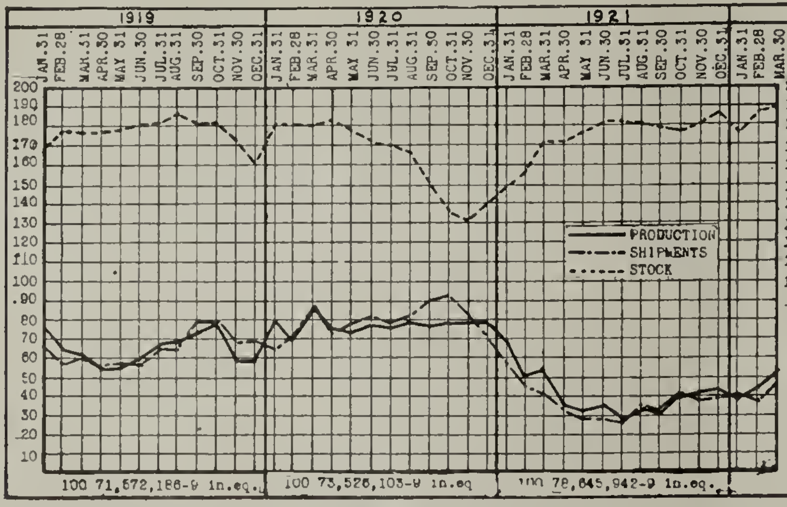
Under an Interstate Commerce Commission decision reached April 15, railroads in the entire territory east of the Rocky Mountains are required to maintain a uniform scale of freight rates on practically all classes of brick. This decision came as a result of the complaint of the National Paving Brick Manufacturers' Association, which held that the roads might make rates on common brick loaded without protection in shipping or breaking, 20 per cent. lower than the charges on other classes of brick.

* * *

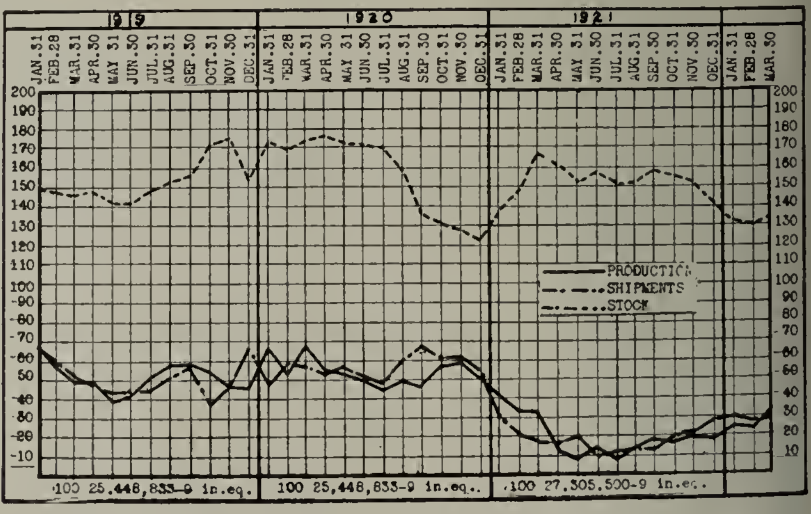
WANT BETTER TRANSPORTATION

New Hampshire brick manufacturers held a meeting at the rooms of the New Hampshire Manufacturers' Association at Manchester, N. H., April 11 and organized the New Hampshire Council of Brick Manufacturers. Steps were taken following the organization to secure better transportation of their product.

Officers elected are: Chairman, W. S. Goodrich, of Epping; directors, Robert A. Perry, Rochester; A. J. Densmore, of Lebanon; D. S. Stone, of Woodsville; Alfred J. Eno, of Exeter; G. L. Lanoix, of Rochester, and W. A. Spiers, of Boston, Mass.



Potential Supply of Fire Clay Brick. See Caption Under First Chart.



Potential Demand for Silica Brick. See Caption Under First Chart.

Burning Shale Brick

Discusses Various Stages of Burning—Production of Colors—Reduction of Scum—Value of Pyrometer and Cones—Speeding Up Kiln Turnover

By L. B. Rainey

Superintendent, Fallston (Pa.) Fire Clay Co.

WHEN Mr. Humphrey, of the Keystone Clay Products Co., asked me to give a short talk on burning before this group on Armistice Day, I hardly knew where to begin or how to handle the subject, because of its magnitude. I assumed, however, that all of the members of this group being red-brick manufacturers, would be chiefly interested in burning as applied to shales. For that reason I am confining myself to remarks along that line. Altho the underlying principles would apply to any material. I am going to divide the subject into four main divisions, as follows:

Water-smoking,
Dehydration,
Oxidization,
Vitrification.

The water-smoking period to my mind is one of the most important divisions of burning. We mean by this period, the time when the kilns are first lighted and lasting until the kiln shows a temperature of perhaps 325 deg. F., or until all of the moisture from the brick is driven off. This point can be determined in a variety of ways, one of the most common being the sticking of a cold poker into the flue. If the hygroscopic water has all been driven off, it will show no deposit of moisture. The question is often raised, is this water-smoking period necessary if the brick are absolutely bone dry when they come from the dryer? The answer is most emphatically, yes. It is a well known fact that brick when they pass out of a dryer are particularly susceptible to moisture and even some gases. They absorb this moisture up to three to five per cent. by weight which clings to the particles of clay in the brick and it can only be driven off by the proper amount of heat. Hygroscopic water, as it is called, differs from the moisture absorbed from the air in that it probably remained in the brick in the dryers, even tho they appeared bone dry.

The temperature of the kiln must be raised quite slowly, otherwise we will get into trouble. If it is raised too fast, the water is changed too rapidly into steam which expands and has a tendency, if it can not escape, to rupture the brick, or at least make the bond of the brick very weak. This is very important, particularly in the manufacture of paving brick.

Why Brick Break and Warp in Kiln

Another cause of trouble is the very sluggish draft which usually prevails at this time, excepting in forced or induced draft burning systems. This causes the moisture, driven out of the top courses of brick in the kilns, to settle on the lower courses, as they are still cold. Then, as the heat advances, the lower courses of brick in the kilns have to get rid of their own moisture, in addition to that which was settled on them. This frequently results in broken and crooked brick, as well as brick deformed by the weight of the top courses making the kiln settle. All of this may result from brick which are set bone dry, but the condition is decidedly worse if wet brick are set. In fact, I would say that a plant, not having dryers which deliver bone dry brick to the kilns is laboring under a very severe handicap.

Also, we have the danger of scumming in this period, if the clay contains any material amount of lime or magnesia. The sulphur from the coal, in burning forms sulphurous and some sulphuric acid, which attacks the lime, forming sulphate of lime. It is very important, if possible, to have a strong draft during this period with a large amount of excess air. At the close of the water-smoking period, the brick should be substantially the same as when the fires were started so far as any chemical or physical changes are concerned.

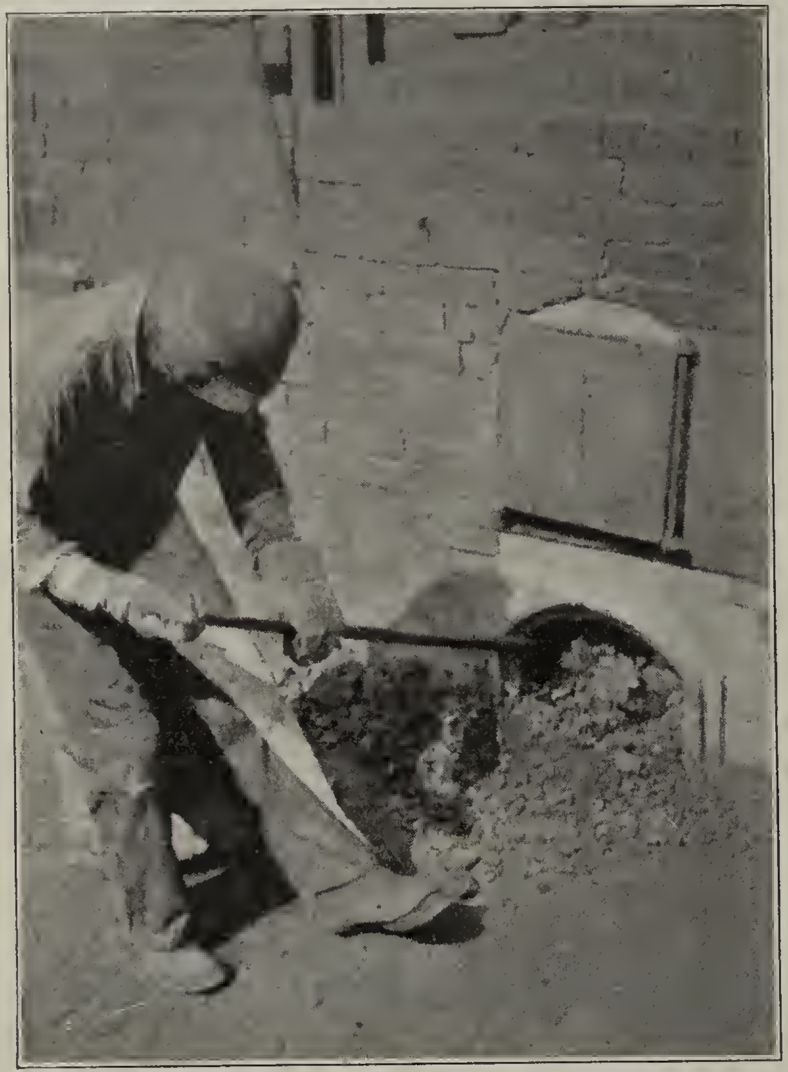
Dehydration and Oxidization

If it were possible to do so, the heat should be advanced fairly rapidly now from 325 degrees to about 850 degrees. The next object is to drive out the volatile matter, such as chemically combined water, the carbonates, sulphur, and so forth. As these reactions overlap each other it is best to discuss them together. The more recent forms of carbon are consumed at about this temperature as well as the breaking up of the carbonates. As most shales contain some lime, usually present as the carbonate, this reaction is to be expected in most all shales at 850 degrees. The consolidation of the caustic lime and clay takes place, beginning as soon as the carbonic acid gas is driven off. The chemically combined water, amounting to about 15 per cent. is released at between 900 degrees and 1,050 degrees. After this takes place the processes of oxidization are taking place rapidly. Carbon can exist in three different forms in shales, (1) New, (2) Bituminous and Asphaltic and (3) Graphitic. In some cases it may run as high as ten per cent. The first kind gives no trouble. The second or Bituminous type is by far the most dangerous. If the heat is allowed to rise to too high a point, the distillation may become too rapid and raise the heat to such a point that bloating or black coring may take place. I have known of

Large, Eastern Ohio Plant of the American Sewer Pipe Co., on Which L. B. Rainey Gained Considerable of His Experience.

Editor's Note—This paper was delivered at a meeting of the Eastern Red Division of the American Face Brick Association, held at the Penn-Harris Hotel, Harrisburg, Pa., on Friday, November 11, 1921.

shales to take fire at this point and burn of their own accord due to their high carbon content. In other words, they were really low grade fuels, they were so high in combustible carbon. Such a shale is exceedingly dangerous and difficult to burn and requires the very closest of attention to see that the heat does not advance until this material has been removed. It is sometimes necessary to draw trials every three or four hours, placed on the extreme bottom of the kiln, until the black center entirely disappears before advancing the heat. One of the most important things to determine in connection with the oxidation of carbon is the best temperature at which this should be done. The bituminous form must be burned out at considerably lower temperature than the graphitic, due to the danger of the bituminous form taking fire itself, if present in any quantity. I would say that a temperature between 1,400 degrees and 1,500 degrees would be the best for most shales.



Cleaning Fires Plays an Important Part in the Burning of Brick.

Length of Oxidization Period

The length of time required depends on the amount of excess air passing thru the kiln with the products of combustion. Also, the density of the material, the thickness of the brick, and so forth. Brick set on the flat for a flash, will take longer than edge set brick. If the oxidation of the carbon is carried on at too high a temperature, that is too near the point where vitrification begins, even tho it may be possible to complete it, we are liable to have a large "red heart" which is familiar to all clayworkers. This is due to the fact that the iron, which is the coloring material in all clays, becomes supersensitive at 1,650 degrees or 1,700 degrees and as a result of its being reduced and reoxidized at that temperature, its coloring is magnified.

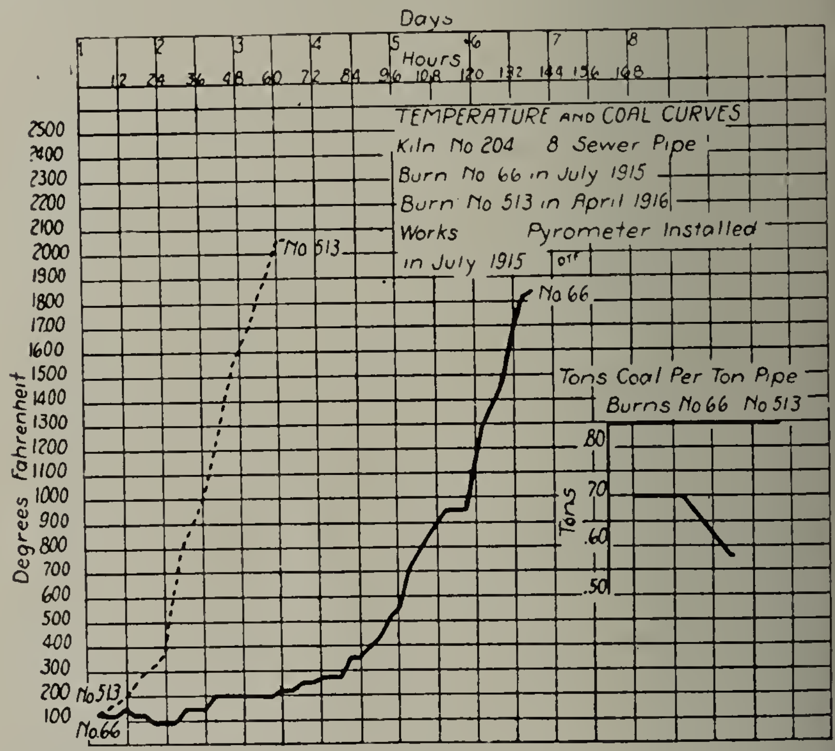
Iron may exist in clays in two forms, the ferrous and ferric form. The ferric form is the desirable form and is the state in which we wish to have it, when the combination into silicates takes place. After the carbonates, pyrites, sulphates, and other combinations are broken up, we have iron in the ferrous condition, which we must oxidize. We cannot do this properly until the carbon is removed as carbon will grab any oxygen which it can get. If the carbon is not entirely removed before vitrification sets in, the outer shell of the brick will become sealed and not allow the gases to escape. This is where the swelling begins, with which we are all familiar. Also, the iron not being reoxidized, will form ferrous silicates, which have a final melting point 350 degrees lower than the same ferric silicate. This is the familiar black spongy center. As a matter of fact it is not the actual carbon itself in this black core that gives it its color, but the ferrous silicate. If there is any carbon at all existing in this black core at the end of the burn, it is very minute in amount, but it probably does not exist at all.

It is quite important thruout this period to have plenty of excess air to speed up the reactions which are taking place. Fires should not be smoky and heavy, but should be clean and light. Also, the grate bars should be kept clean and somewhat open.

The Vitrification Period

At the finish of the oxidation period the heat can be raised to the finish point rather rapidly. If the clay has a rather narrow range, care must be used not to carry the kiln to the point where the brick begin to be kiln marked and deformed. The drawing of frequent trials, full brick size, during this time is very desirable. In that way we can keep in close touch with the hardness as well as the colors which are being developed. And, after all, the color is the thing for which we have been striving ever since lighting the kiln. The reactions during this period are not very well known. They consist of a gradual going into solution of the various constituents, one dissolving another until vitrification has reached the point where we are satisfied to stop the kiln. A clay with a wide range is very desirable and far safer. Clays containing lime in a very finely disseminated state, may burn nicely up to this point and then melt completely down by being burned just a matter of an hour or two too long.

Producing the Colors

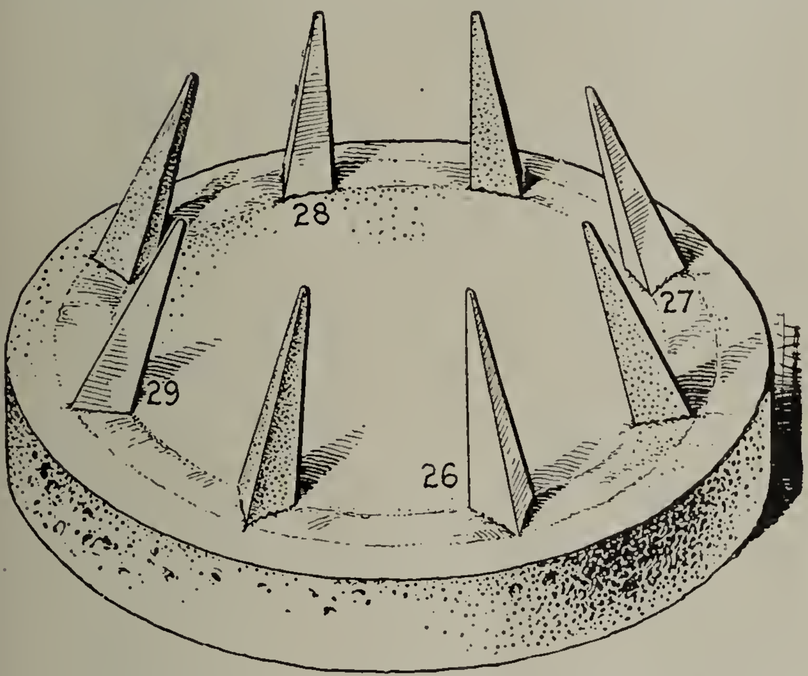


The Pyrometer Saves Coal and Time Because It Enables You to Make a Steady Advance in Temperature Maintained in Kiln with No Set Backs Which in Curve No. 66 Means More Coal and Time.

It is during this period, usually the last few hours of the burn, that we produce our colors. If we wish a clear red, we try to keep our fires oxidizing in character; that is, have our fires clear with some excess air. If we desire the browns, blacks and chocolates, we should have them reducing, that is smoky and with no excess air. I might add in this connection that a great many clays that produce a poor clear red, can be made to produce a fairly good brown and chocolate, especially if made into a rough texture brick, by burning with flashing or reducing conditions at the end of the burn. The condition of the iron in the clay seems to have a lot to do with the final color. If we can maintain an excess of air, clear to the end, we can get a much lighter red color. As the temperatures get higher, the gases have a tendency to become reducing in character with the consequent darkening of the brick. Also, the shales which scum can be helped somewhat by heavy reducing conditions at the end of the burn, altho this trouble could not be entirely eliminated. This reducing condition of the fire is called flashing and is only partially understood, especially as applied to fire clays. I am firmly convinced that the rate of cooling has a great deal to do with the final color of a shale brick that has been flashed. The more rapidly it is cooled the greater the tendency for the flashing effects to be lost. In other words, it cools toward the lighter shades when cooled too rapidly. Also, the colors are not so brilliant.

Methods of Kiln Control

In a short discussion on burning, such as this, it would not be complete, it seems to me, without at least mentioning the methods of control used in the ordinary plant. First and most important is the pyrometer. By this, we can keep a fairly close line on our kilns at all times. Also, after establishing our various burning periods, danger points, and so forth, we should be able to get our kilns off more uniformly. We should be able to duplicate good burns and quick burns without any trouble whatsoever. The average clay plant has a larger production capacity in the factory than kiln capacity, yet burns frequently run a day or two longer than expected, with a further reduction in kiln capacity. A schedule can be established and a card put in the burner's house, showing where the kiln should be at all times. This sort of a schedule will do away with "hang over" kilns. I have found that the burner is just as anxious as the management to get the kilns off promptly if he knows exactly what is expected of him. The most important use of the pyrometer is during the water-smoking and oxidization periods. If I could not have a pyrometer thruout the burning of a kiln, I would be satisfied if I could have it during those two periods.

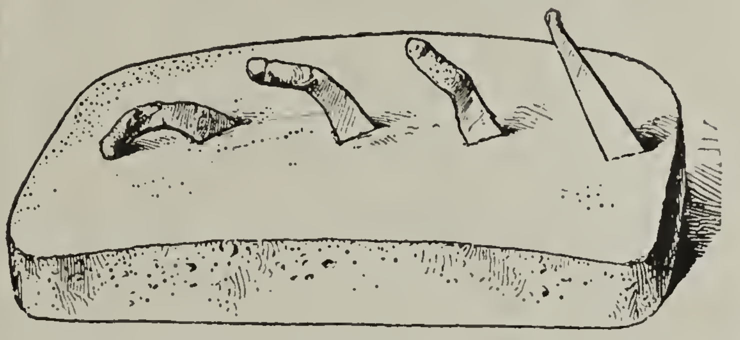


This View Shows How the Cones Look Before They Are Placed in a Kiln.

Also, on a yard of say ten to fifteen kilns, it is well to have one kiln equipped with a bottom couple. The average person is surprised and amazed to find how much the bottom of a kiln lags behind the top, during the early and middle stages of the burn, 300 deg. to 400 deg. F. not being uncommon. Thus in establishing a burning system on a plant when we occasionally find that everything is not going according to our previous information on that particular point, if we get into it further, we find that perhaps the kiln really was 300 deg. F. farther behind than we thought. This might account for the core, or the broken brick in the bottom of the kiln or some other trouble which has arisen. For that reason I favor the occasional use of a kiln with both top and bottom couple.

Cones Should Also Be Used

Cones are very important at the finish of a kiln and I would not be without them. I have found them very reliable, both in establishing vitrification and as an aid in color. I remember in one year on a certain plant, we burned off approximately 1,500 kilns and I know of no case where the cones went wrong. In fact, we depended on them for the finish, in connection with our draw trials, in every case. On a large yard, where the head burner has from 35 to 45 kilns on fire at one time, he cannot have too much controlling apparatus as his "first aid outfit." In some cases, the use of flue gas analysis is a very big help, but the average yard does not have large enough organization to get into the fine points of burning to that extent.



A Cone Pad Which Was Taken from a Fired Kiln. These Cones Are of Different Numbers and Those Most Fusible Deform First. Heat Is Measured by Their Deformation.

Selection of a coal is very important, also, one of the most important features being the fusion point of the ash. A coal with a low fusion ash in certain types of fire boxes is a source of a lot of trouble. Coals for horizontal grate bars should have a fairly high fusion point of ash. This point is not generally considered nor can it be determined from the chemical analysis. It must have an actual fusion test made to get at it accurately.

Burning With Producer Gas

Another important development in the line of burning has been the larger use of producer gas. There has been a great deal of discussion on this and I think a lot of claims made which are not borne out in practice. There is no question about producer gas being very successful in certain types of kilns and installations and, in others, no saving is made from the standpoint of fuel consumption alone. Producers make it possible to use a low grade fuel and to pipe the gas around, to use to good advantage. It should not be piped too far, however, on account of condensation of tar. My purpose in mentioning producer gas today, however, was not to give a discussion on it but to bring out one important point that I think is not generally understood in connection with small producers attached to kilns and boilers. No heat is gained by the use of steam thru a bed of incandescent fuel. The steam is broken down into hydrogen and oxygen and in doing this the bed of fuel is cooled. To gain this back again, the gases must burn and re-form steam. It does this, but it is questionable whether any such action is complete. Ordinarily a loss of heat units would result. The chief saving from fires blown with steam, would be the complete burning out of the carbon in the ash, the use of a lower grade of fuel, the better control, the more rapid burning due to the greater draft and the consequent expulsion of the products of oxidation and dehydration.

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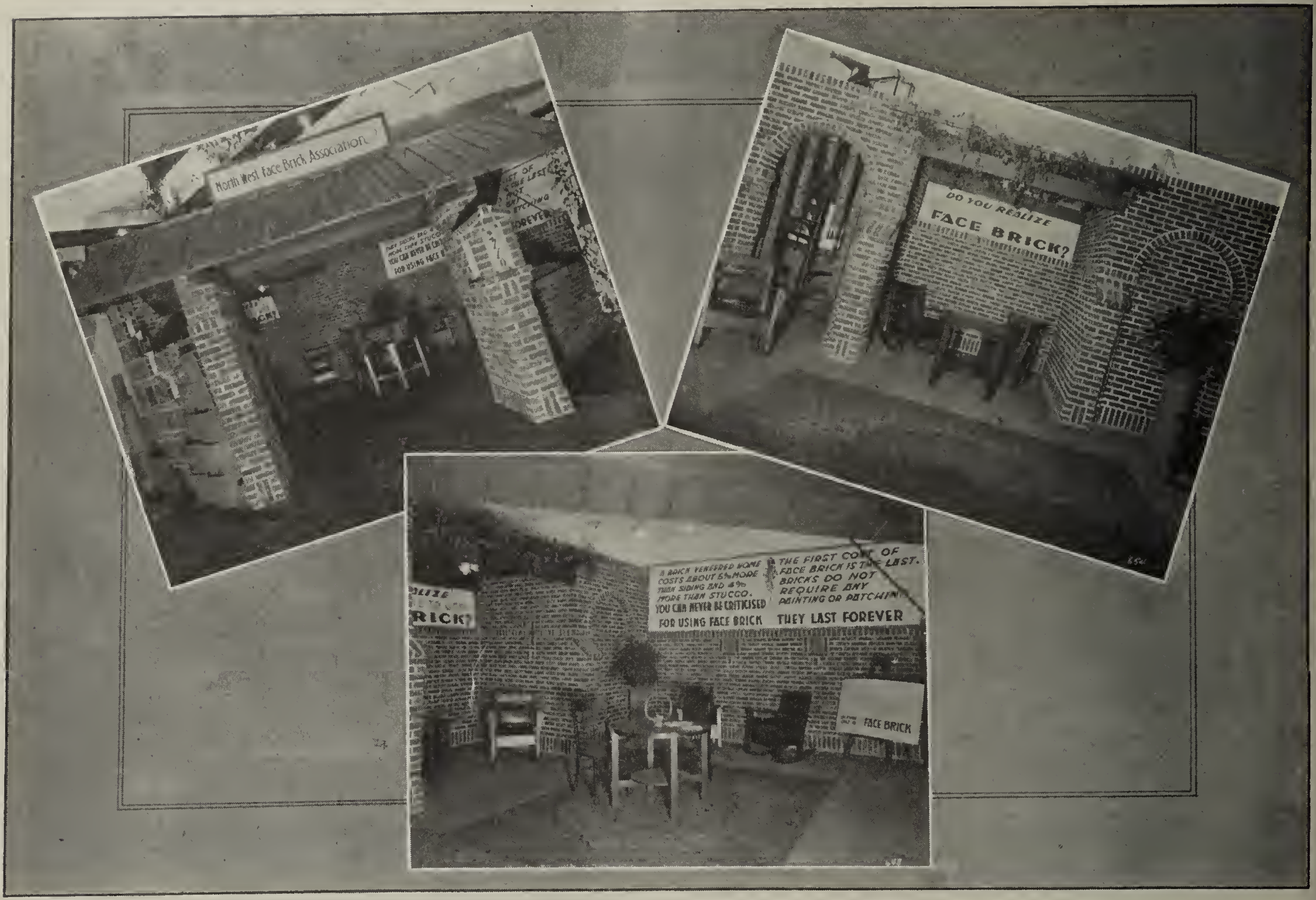
COOPERATIVE EXHIBIT OF FACE BRICK MEN STIRS UP NUMEROUS INQUIRIES

A beautiful exhibit of face brick from four states was the center of attraction at the recent building supply expo-


North West Face Brick Association
DO YOU REALIZE FACE BRICK?
A BRICK VENEERED HOME COSTS ABOUT 5% MORE THAN SIDING AND 4% MORE THAN STUCCO.
YOU CAN NEVER BE CRITICISED FOR USING FACE BRICK
THE FIRST COST OF FACE BRICK IS THE LAST. BRICKS DO NOT REQUIRE ANY PAINTING OR PATCHING
THEY LAST FOREVER
FACE BRICK

Three Views of the Crowd-Attracting Face Brick Exhibit Contributed by the Northwest Face Brick Association to the Recent Successful Building Material Exposition Held at Minneapolis, Minn. It Excited a Volume of Unsuspected Inquiries.

sition in Minneapolis, Minn. The display of the popular clay product was conducted by the Northwest Face Brick Association, of which C. A. Gunn, is secretary-treasurer, with headquarters in St. Paul. The three views appearing at the top of this page represent as many aspects of their magnificent presentation which not only interested visitors, but aroused hundreds of favorable inquiries. Mr. Gunn explains very clearly how the organization arranged the exhibit and the results obtained:

"This show was the most successful that has ever been attempted in the Twin Cities. Last year the show was confined to the Armory proper, but this year it was found necessary to take in the coliseum adjoining, giving twice the number of square feet of floor space.

"The material for this display was furnished by all our members, each furnishing their proportion of the face brick, and bearing their share of the expense of installation. It may be interesting to know that in this exhibit were brick from plants in Ohio, Indiana, Illinois and Iowa, all thoroly mixed before being laid in the wall. It is just another illustration of cooperation in promoting the use of face brick. Each member had a representative at the booth at all times, and the prospective builders were more than surprised and pleased at the good feeling thus displayed among competitors. Literature was distributed bearing the names and addresses of all the members and, altho only a week has passed since the show closed, the various firms have received inquiries as a result of the exhibit.

Augmenting Your Sales of Clay Products Thru the Dealer

THE ONLY TIME when the manufacturer and the retailer can successfully work together is when their sales interests are identical, or when they are of mutual business value.

The manufacturer can profitably use the retailer when the dealer will (1) stock his goods and push them, (2) keep on the lookout for every prospect, (3) make friends and be constantly in touch with the local contractors and architects, (4) be willing to study construction requirements, (5) refuse to "shop around" and trade one manufacturer against another, (6) be on the alert to increase the cost accounting and yard efficiency of his business, (7) and, finally, be depended upon to work with the manufacturer in the practical use of literature, cooperation with salesmen and planning special campaigns so as to clinch manufacturer advertising.

Just so far as the retailer fails in any of these respects, he detracts not only from his own success but from his value as a local agent for the manufacturer.

It is freely admitted that the average dealer fails to some extent in every one of these seven essentials. Can this situation be changed, and if so, how?

Retail Building Supply Business Has Changed

In the first place, a great change has come over the retail building supply business in the last five years. Dealer

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Editor's Note—This article is from an address delivered by F. D. L. Squires, managing editor, Building Supply News, before the meeting of the Wisconsin Clay Manufacturers' Association.

associations and the dealers' trade publications have already educated hundreds of the retailers to see the importance of efficient cooperation with the manufacturer.

But the manufacturer himself can vitally help the good cause along, and it is to his interest to consider what he can do in practical, everyday fashion that will prove the best kind of investment at the minimum cost of time and expense.

The manufacturer has been too independent of the retailer. He will find it will pay him to consider the dealer as a definite part of his sales force. In doing that he must realize (1) that the average retailer is a graduate of the University of Hard Knocks, (2) that 99 per cent. of them are without the seasoned training and experience of the manufacturer's crack salesmen, (3) that he makes a very small margin on the greater part of the materials he handles, (4) and, finally, that out of all the materials he does merchandise, his special interest in any of them depends upon two things, his profits and the personal contact and enthusiasm aroused in him by particular manufacturers.

Points for Manufacturers to Remember

But the retailer is a perfectly normal human being, and an American who will react encouragingly to the right sort of treatment. For that reason, we suggest that the manufacturer who wants to make the most out of the dealer should: (1) Take more direct, personal, first-hand interest in the affairs of each dealer he desires to have represent him. (So far as possible the manufacturer should do this himself first and not leave it solely to his sales manager or any other member of his organization.)

(2) Manufacturers should get behind and support better and more uniform cost accounting methods for the dealer.

(3) Manufacturers should help the dealer to solve the problem of fair prices, and protect him against the price scalper when it means business suicide for the retailer.

(4) The manufacturer can afford to spend less in general publicity if he will spend a little more in personally educating the dealer.

The tremendous hold of the lumber producer upon the lumber dealer is to a very large extent based upon just such intimate, personal acquaintance and friendship. The manufacturers of clay products would do well to study this fact and develop the idea in their own relations with the retailer. What one large manufacturer of clay products is doing for the dealer is worth epitomizing in this connection.

How the Manufacturer Can Help

"We recognize the fact that when we deliver our products to the dealer . . . . our part in the sale is not completed until the dealer has resold the product to his customers....

"We are more interested in having the dealer make profits on our line than in selling him the goods in the first place....

"We give the dealer the same attention and cooperation as we would a branch office because in reality the dealer functions—or should—as a branch office for each manufacturer whose goods he handles.

"1. Dealers receive the benefit of an intensively advertised line of products—advertised thru sales letters, pamphlets, booklets, broadsides, and so forth.

"2. We conduct a special advertising and selling campaign in the dealer's name in addition to our general advertising—shaped to meet local conditions.

"3. The dealer gets exclusive sales rights on our lines—all business coming out of the dealer's territory direct to our firm is turned over to him—all leads secured by our advertising department are at the dealer's discretion turned over to him or developed in our Sales Promotion Department and at the right time turned over to the dealer or developed by mail, the sale made and given to the dealer, or all three methods are worked at once.

"4. The dealer is given personal sales assistance in swinging business.

Dealers Supplied With Literature

"5. All advertising and sales literature are of the very highest sales quality.

"6. Dealers are kept supplied with a stock of numerous pieces of advertising and sales literature.

"7. Special schooling work is carried on with the dealers and their salesmen by mail and in person, as to manufacturing methods, practical salesmanship, and the advantage of quality and service merchandising as compared with price basis of selling.

"8. Each dealer territory is carefully analyzed, possibilities for selling clay products studied, local conditions and all features of the dealer's business considered, and special program and definite line of action for the dealer worked out and applied in the best possible way to get results for all three—the consumer, the dealer, and ourselves. And the three certainly work out together because the biggest benefit is secured to one when it is likewise secured for the others."

We believe this exhibit of what one manufacturer is doing is worth the most careful consideration and adoption, so far as possible, by clay products manufacturers everywhere.

Whatever distribution of clay products thru the retail dealer is now being carried on, we believe it can be vastly increased thru the method suggested above, and the result will be exceedingly advantageous to the manufacturer, and in the long run prove more efficient and cost saving than any other.

* * *

CHAMBER OF COMMERCE MEETS MAY 16

Among the interesting subjects to be discussed at the tenth annual meeting of the Chamber of Commerce of the United States, which will be held in Washington, May 16 to 18, are the following:

Housing: How zoning stabilizes real estate values. Will shoddy construction drive investment money out of the housing market?

Production in Industry: Simplifying variety and standardization. Uniform cost methods and production aids. Business cycles, their study as related to business control. Labor and working conditions. Raw material supplies. Transportation.

Natural Resources: The coal industry and the public. The value to the public and the coal industry of uniform grades, storage, and better methods of handling coal carrying equipment. Extent to which American industries producing raw materials are dependent for their prosperity upon European markets.

Railroads: Experience under the transportation act in the regulation of railroad rates, railroad security issues and capital expenditures. Railroad wages and working conditions.

Highway Transport: Economic foundation for future progress. Practical highway transport regulation. State participation in highway development.

* * *

BRICK MOVING FAST IN NEW ENGLAND

The brick situation in New England generally is better in outlook than it has been for many years. Direct observation by Brick and Clay Record and inquiries reveal the fact that there is practically no stock on hand. Even in yards that have a small quantity of stock on hand, orders on the books are sufficient to more than cover stock. Inquiries are coming in very fast, and some of the yards are not in position to offer quotations at the present time. Even in the face of this situation, the prevailing price of brick has remained at about $14 at the yard and there does not seem to be any likelihood of an immediate advance.

Aim to Eliminate Restrictive Codes

Hope to Reduce Cost of Building by Standardization and Elimination of Wasteful Practices in Building Codes—Tentative Report, If Adopted, Will Widen Market of Clay Products

IN THE REPORT of the United States Senate Committee on Reconstruction and Production, which was appointed in 1920 to investigate the underlying reason for high cost and inactivity in the building industries, was brought out that the building codes of the country had not been developed upon scientific data and are not uniform. In many instances they involve an additional cost of construction without assuring more useful or more durable buildings. In almost every city where hearings were held, statements were made to the effect that most building laws required more material or requirements of workmanship than were justified for the purpose of the buildings affected.

Secretary Hoover of the Department of Commerce, recognizing the necessity for some central co-ordinating body to standardize, so far as possible, the building laws of the country, organized the Building Code Committee for that purpose. This committee was composed of nationally known men who have had a long time contact with structural engineering problems and who were well qualified to assume the work contemplated. They include: chairman, Ira H. Woolson, consulting engineer, National Board of Fire Underwriters; Edwin H. Brown, architect; William K. Hatt, Professor of Civil Engineering, Purdue University; Rudolph P. Miller, Superintendent of Buildings, New York City; John A. Newlin, in charge of section of timber mechanics, Forest Products Laboratory; Ernest J. Russell, architect; Joseph R. Worcester, consulting engineer, and Frank P. Cartwright, technical secretary.

Six Purposes of the Committee

The committee was organized in May, 1921. It immediately resolved to serve the following purposes:

(1) To study existing codes and determine the extent to which their requirements are oppressive to building industry.

(2) To gather information concerning minimum requirements for buildings of different types in an effort to secure safe, economical construction and eliminate waste in building.

(3) To prepare and publish recommended building regulations based upon information obtained thruout the country.

(4) To investigate the merits of new building materials and methods of construction which promise economy, and so far as it can do so, legitimately to recommend such as appear to have special merit.

(5) Use influence to further any measures promising improvements in present method of building regulation.

(6) It is not the purpose of the committee, at least for the present, to draft a complete building code.

Try to Reduce Cost of Homes

The great scarcity of dwellings thruout the country, especially of the small one and two-family types, made it apparent that any assistance the committee could render in reducing the cost of such construction would be immediately helpful. Hence this phase of work was given precedence.

The financial importance of such construction is indicated by statistics compiled by the Chamber of Commerce, showing that the cost of such structures built during the year 1920 was about 75 per cent. of the total cost of dwelling accomodation provided in cities, and about 28 per cent. of the total cost of all classes of building construction. One and two-family dwellings made up 42 per cent. of all building operations reported. It is apparent, therefore, that if building regulation could be so modified and standardized as to effect even a small saving on each building, a large total economy would result.

As a means of reducing construction costs in masonry wall buildings, strong appeals were made to the committee for more generous recognition of the eight-inch brick walls, than are now received in building codes. It was readily realized that marked differences of opinion existed on this subject, and that safety and efficiency must not be sacrificed for economy. It was therefore decided to make a thoro investigation before making recommendations, and so that a wide expression of opinion might be obtained as to the relative fire resistance and structural stability of the eight-inch versus 12-inch masonry walls, questionnaires were addressed to a large number of building inspectors of the largest cities, fire chiefs and fire marshals, and insurance companies and fire insurance adjustment bureaus.

Investigate 8-Inch Brick Walls

In connection with the collection of data on walls, the U. S. Bureau of Standards assisted the committee by undertaking a broad investigation of the relative merits of various types and thicknesses of brick walls. This included a careful analysis of wall requirements in 134 selected building codes, and the conduct of a notable series of fire tests upon hollow brick walls of large size built with different varieties of brick and mortar.

The committee has prepared a tentative list of specifications which are now being studied by engineers, architects, building commissioners and others. After criticisms have been received the report will be published in full and given wide distribution with recommendation for adoption.

The whole object of the data is to help eliminate waste in home building, to secure safe and yet economical construction, and to reconcile inharmonious and frequently too restrictive provisions in existing building codes.

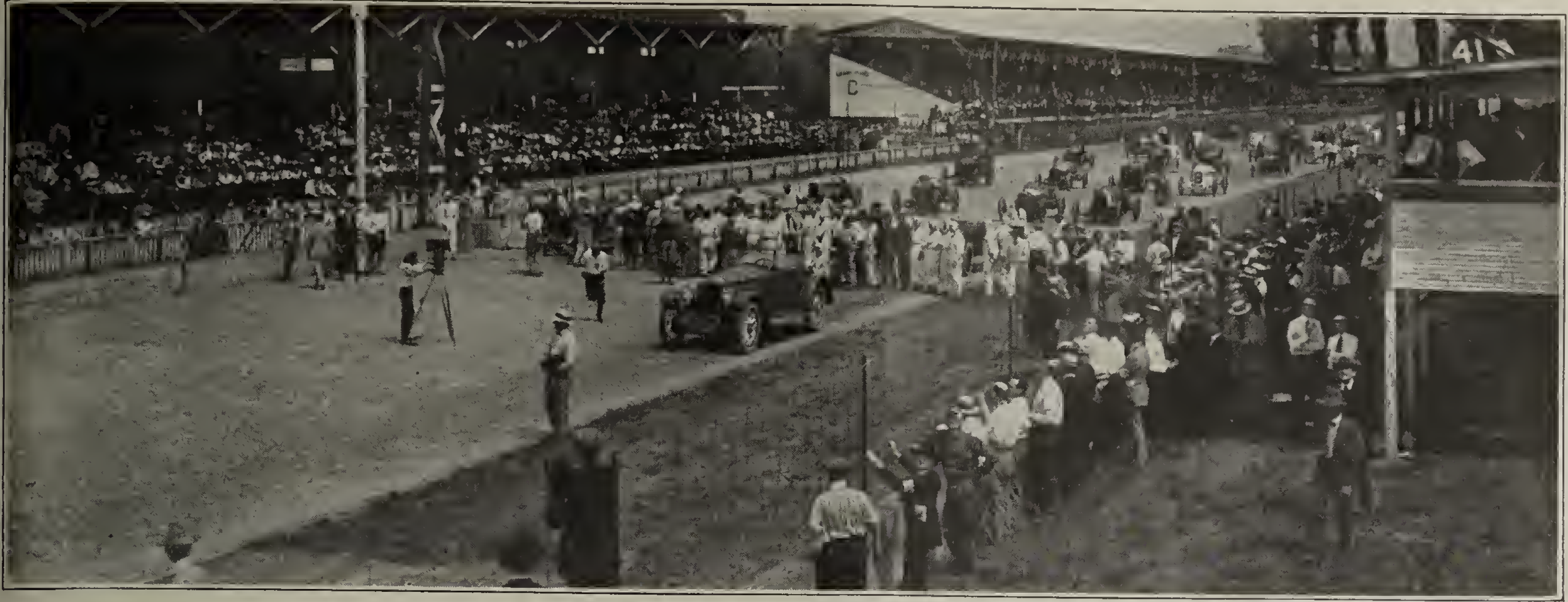
The importance of this work to the clay products industry is considerable. It will remove many of the superfluous restrictions that have existed in many instances, and by lowering the cost of construction should widen the market for the industry.

* * *

BRICK STANDS 12 YEARS SERVICE ON SPEEDWAY WITHOUT FAILURE

Stanley L. Knisely, economist of the National Paving Brick Manufacturers' Association, has just returned from an inspection trip to the Indianapolis, (Ind.) Speedway, probably the greatest auto track in the country with a single exception.

As will be remembered the oval opened in 1909. At that time it was surfaced with a macadam especially prepared for the purpose. During 1909 numerous calamities marred the season



The Speedway Automobile Race Track at Indianapolis, Ind., Which Every Year Is the Scene of the Country's Automobile Classic. This Track Was Built of Brick 12 Years Ago and Seems Good for an Indefinite Length of Time.

and several lives were lost. The reason, so it seems, was because the surface of the track was not equal to the strain and impact of the machines as they scorched along.

Following the 1909 season promoters discussed every angle of the situation to find a remedy and finally conferred with representatives of the National Paving Brick Manufacturers' Association relative to laying a brick road.

The project cost $800,000 and was carried out under the personal supervision of Will P. Blair, vice-president of the association. Since that time races have been held every season, and each year sees records broken and a greater number of entries.

"But," says Mr. Knisely, "the paving is in perfect condition and is as serviceable as it was when it was first put into use. I walked entirely around the track and did not notice an important imperfection.

"Even the turns, which receive thousands of racking impacts, as the speeding cars circle around the track, show few signs of wear. The track is 60 feet wide and has a circumference of 2½ miles and at the present time, despite 12 years of the hardest service possible, not a square foot is in need of repair."

* * *

Refractories Accountants Meet in Nation's Capital

THE VERY PROGRESSIVE GROUP of men known as the Refractories Accountants' Institute held a meeting in the Washington Hotel, Washington, D. C., on April 24. This organization is composed of men who are actively engaged in accounting in the offices of members of the Refractories Manufacturers' Association.

The object of the Institute is the elimination of waste and the reduction of costs thru modern accounting methods. To accomplish this, its work and studies involve: (1) Distributing of operating expenses to different classes of products; (2) reports covering values of raw and semi-finished materials as it passes thru successive production stages, so as to reveal the losses incident to each process, and to reduce such losses; (3) records showing not only the cash value (cost) of fuel and other supplies, but the quantities used, so that the consumption of these may be kept at a minimum; (4) compilation of statistics covering production so as to determine the maximum and minimum economical tonnage with present equipment; (5) setting up of standards for the predetermination of costs, so as to rectify abnormal expenditures; (6) comparison of business and other forms, to the end that the most economical and efficient forms may be brought into general use, eliminating such as demand an unnecessary clerical training in men whose regular employment does not call for such attainments.

Huston Thompson Addresses Institute

A very interesting program had been arranged and included among others an address by Commissioner Huston Thompson, of the Federal Trade Commission, on "A Sphere of Usefulness for Trade Associations and Their Secretaries." At the very beginning of his talk Mr. Thompson made the significant statement that the chief end of trade associations should be to create confidence in the buying public for the things which the members of the association have to sell. In order to retain a market that will appeal to the confidence of the public, it is necessary for business to see that restraints of trade, and unfair methods of competition are eliminated from the market place.

Mr. Thompson explained the origin of the Federal Trade Commission and its function of regulating business practices with a view to eliminating unfairness to the public. He also gave a comprehensive outline of what a trade association secretary can do in the interests of business and the public, one of the chief of which is finding new fields for sale and distribution.

Discuss Interesting Subjects

Arthur Lazarus, chief of the cost accounting bureau of the Fabricated Production Department of the Chamber of Commerce of the United States gave a very interesting address which held the attention of the delegates.

The work of the Institute during its fiscal year was reviewed by W. J. Westphalen of the Laclede-Christy Clay Products Co., St. Louis, Mo. Mr. Westphalen also offered valuable suggestions for the future course of the Institute. Several very excellent topics were discussed by members and afforded much information of value. H. L. Gronne and H. L. Ahrbecker discussed the "Use of Standards in Costing," and A. Henderson and E. F. Myers discussed the subject, "Predetermination of Costs."

"Using Costs for the Elimination of Waste" was made the subject of a talk delivered by F. S. Dunlap and F. A. Strassler.

R. E. Byrne, representing the Committee on Labor Costs, presented the report of that body and F. W. Neuroth rendered the report of the Committee on Raw Materials Costs.

What Is a Brick?

Definitions from Various Dictionaries, Encyclopedias and Other Lexicons of the Word Brick—Legal Opinion on the Meaning of "Brick" in Building Codes

By D. Knickerbacker Boyd

Architect and Structural Standardist

IN ADDITION to being a city planner of note, Andrew Wright Crawford is a prominent Philadelphia attorney and a lecturer at the Temple College Law School. Mr. Crawford uses a brick as the most practical method of visualizing to his classes the difference between "real" and "personal" property. He proceeds somewhat in this fashion:

"A farmer or other landholder owns a piece of ground, underlaid with clay suitable for brickmaking. This is 'real' property. He sells the clay to a brick manufacturer and in this sale it becomes 'personal' property. The brick manufacturer makes it into brick, fires it and sells it to a builder. It is still 'personal' property. The builder turns it over to a bricklayer who, laying brick on brick and fastening them into one mass by means of mortar, builds them into a house. The brick is now 'real' property. The building stands for some time until finally it may be decided to tear it down, to make way for a larger building, at which time the brick are scrapped and sold, again becoming 'personal' property. They are again used in erecting another building, and they again become 'real' property."

Definitions of a Brick

That the above illustration is more than one of mere academic interest is attested by the number of suits involving the settlement of estates, the adjudication of debts, mortgages and other obligations which have been thus determined using clay as a basis.

But to return to the question—What is a Brick? Definitions follow which are taken from a number of authoritative sources:

1. Brick: Earth and clay formed into squares or regular forms and burned in a kiln or baked in the sun.—Worcesters' Dictionary, 1908, Page 172.

2. Brick: A lump of baked clay.—An Etymological Dictionary of the English Language, 4th Edition, 1910, Rev. Walter W. Skeat, Page 73.

3. Brick: A rectangular mass of clay and sand, dried in the sun or baked in a kiln and used for building purposes.—The Encyclopedia Americana, 1918, Page 489.

4. Brick: A molded block of clay, either burned or sun dried.—Funk and Wagnalls New Standard Dictionary, 1919, Page 333.

5. Brick: A substance formed of clay, kneaded, molded, and hardened by baking with fire, or in warm countries and ancient times by drying in the sun; used instead of stone as a building material. A new English Dictionary, by James A. H. Murray, Vol. 1, 1888, Page 1093.

Calls It Artificial Stone

6. Brick: A building and paving material made from clay (either pure or mixed as with sand, lime, and so forth) by molding into blocks while moist and hardened in the sun or by fire.—Webster's New International Dictionary, 1921, Page 274.

7. Brick: A kind of artificial stone generally made of burned clay and largely used as a building material. The Encyclopedia Britannica.—Eleventh Edition, 1911, Vol. 4, Page 517.

8. Brick: Common Brick are made from clays or shales usually of low grade, and mostly of red burning character, altho in some districts cream-burning ones only are available.—The New International Encyclopedia, Second Edition, Vol. 3, 1914, Page 730.

9. Brick: A kind of artificial stone made (usually) of moistened and finely kneaded clay molded into rectangular blocks (the length of which is commonly twice the breadth) and hardened by being burned in a kiln or sometimes especially in warm countries by being dried in the sun. Brick in the United States and Europe are generally red, but some clays produce yellowish brick, as for example the Milwaukee brick, much used as an ornamental building material in the United States.—Century Dictionary and Encyclopedia, 1911, Vol. 1, Page 678.

Architect's Definition

10. Brick: (a) A regularly shaped piece of clay hardened in the sun or by the heat of a kiln and intended for building, commonly one of the very many pieces of uniform size. The term is usually limited to pieces of clay not very thin and flat which latter are called tiles, the ordinary brick are, as in parts of the United States, about 2½x4x8 inches, or as in parts of Europe, about 2⅝x4⅜x9 inches. Brick made for face-work, as it is called, that is to say, the smoother and more elegant facing of the exterior of a wall are made of many shapes and colors and commonly laid with mortar joints much smaller than those between the common brick in the same wall. Molded brick are made in a great number of patterns, and so arranged as to form, when laid up in the wall, continuous lines of molding, curves of an arch, and the like, or patterns in relief, and even to the extent of having a raised leafage or the like upon their faces.—Dictionary of Architecture and Building, Russell Sturgis, Vol. 1, 1901, Page 355.

11. Brick: Brick may be defined as solid building units made of burned clay. They are comparatively small in size, therefore easily handled, and being already burned are extensively used in buildings that are intended to be fire-resistive and in other forms of construction that are permanent in character. When referred to in the mass, or as a building material they are called brick.—International Correspondence Schools.

12. Brick: The word brick, as ordinarily used, refers to a block of common clay burned in a kiln, and until comparatively recent years, practically all brick were burned clay brick. Brick, however, are made in which the base is of other material than common clay, and when such brick are referred to, a descriptive prefix should be used in connection with the word brick, such as fire-clay brick, slag

brick, silica brick, cement brick, sand-lime brick, and so forth.—Hool and Johnson Handbook.

Legal Interpretation

Another element remains to be considered in addition to the mere definition of the word Brick, and that is the legal aspect of the term. It will be noted from the foregoing definitions that unanimity exists concerning the fact that the single word Brick signifies a clay product.

The following opinion, contained in a letter from Andrew Wright Crawford, attorney-at-law, is of especial interest as showing that legally the word brick also must be taken to indicate a clay product only.

"You asked me as to the interpretation of the word 'brick' as that word is usually used in statutes and deeds.

"In a statute ordinary words are to be interpreted in their ordinary sense unless there is something in the statute to indicate an unusual sense. For ages "brick" has meant clay brought into its familiar form by some method of firing. The word "brick" in building codes is to be regarded as inserted by the legislatures, gathered together from all over the state, with the intention of using it in its state-wide, and I may say nation-wide, meaning. It cannot be their intention to refer to some new combination, not including clay, even if the combination is cast into a form with the same dimensions as the usual brick. For instance, a composition of sand and cement brought together in a block of the same dimensions as a brick would not satisfy the requirement of a building code for brick, unless the code referred to such a composition in some definite interpretation of the words used.

"If a deed should call in the usual form for, for example, 'a three story brick messuage' this would call for a building made of brick formed of clay as the chief constituent."

Summary: It is obvious from all of the foregoing that a brick may be only defined in language which would read somewhat as follows:

A rectilinear object—the chief ingredient of which is clay brought to hardness by the application of heat, and intended for ordinary construction purposes. Any other object of similar dimensions containing other ingredients or intended for different uses may only be identified by a word or words prefixed to the word brick indicating its constituent materials or intended uses such as Silica Brick—Refractory Brick—Sand-Lime Brick—Cement Brick, and so forth.

* * *

How the Ideal Wall Can Bring the Brick Man Business

Editor's Note.—This article was written by Milton H. Andrew of Los Angeles, Cal., who, it will be remembered was very active in introducing the Ideal brick hollow wall to the industry. Mr. Andrew has had considerable experience in advertising and especially in promoting the Ideal wall. His literature on this subject has been sent to brick manufacturers in practically every part of the world.

FIVE HUNDRED MILLION DOLLARS is a lot of money to lose in one year, and yet that was the actual fire loss in the United States for the 12 months of 1921. To come down to smaller figures and yet show how the menace of inflammable construction has increased—let us look for a moment toward the Pacific Coast.

Los Angeles City reports a $595,000 fire loss for the year 1919, $796,000 for 1920, and $1,460,000 (round figures) in 1921. National statistics show there were 15,219 people burned to death last year, and 17,641 seriously injured from fire. These figures represent only the recorded losses and pile up a total of more than 41 human lives every 24 hours and over $1,370,000 daily loss of property.

Folly-of-misunderstood-economy is one of the biggest competitors of clay product manufacturers today. Home builders have been shown the first cost of other constructions and rather take for granted that brick homes cost more. The result has

A California Style Bungalow Built with Ideal Walls. Unprecedented Interest Has Been Developed by the Public in This Type of Construction.

The Ideal Wall Used in An Apartment Building in Southern California, Where This Type of Brick Construction is Very Popular.

been a literal landslide into brick substitutes that only cooperative "public education" can check.

How Long Will Your Doors Be Open?

Brick manufacturers who want to remain in business will refer to the February 7 issue of Brick and Clay Record, and there be reminded that more than 81 per cent. of American common brick companies have permanently closed their doors since 1900. The handwriting on the wall was never more clear. The clay product industry is face to face with an existence crisis, and the only two factors that can save the day are—national organization and constructive publicity.

Competition has been teaching how much cheaper it is to build with "something just as good" and their campaign for several years has been in national proportions.

Now the brick manufacturer has a new weapon with which to meet this "economy" phase of competition. Development of the Ideal brick hollow wall has swept aside all argument about cost, the Bureau of Standards has answered the question of strength, and the only thing left for brick makers to do is to tell the public about it!

Business Is on the Upward Swing

One of America's leading banks, in its business forecast for 1922, says, "We have reached the place in the commercial highway where more money is going to have to go into sales and advertising departments and less into high power production." Brookmire's Economic Service of New York, perhaps the largest and most authentic economic forecasters in America, on March 13, said, "We advise a relaxation of conservatism, a little more confidence in the future, a more liberal buying policy, because of our belief that general business is on the upward swing, and will broaden materially in the next few months." The National Credit Monthly for February makes this observation for the present year, ". . . the prospect of great activity in the construction field looms large and is the brightest star in the clouded firmament of business." Pacific Factory Developer for January prophesies, ". . . the present year may be expected to be one of the most competitive years in our history. . . . It is plainly up to the American manufacturer to continue the process of education that all selling campaigns really are. . . . Get ready to compete as you never did before."

These high points, reflecting opinions from coast to coast are a fair indication of what may be expected from now until December, 1922, and without question for a considerable time thereafter.

The building industry stands out as the "brightest star" in the world of business today, but keen competition and "public education" will feature strongly all selling records.

Your "Ideal" Wall Campaign

To those companies who contemplate a brick hollow wall campaign or who have such a plan in action—I would like to point out these four fundamental factors that have proven essential wherever Ideal wall homes have been successfully introduced:

First: Use an advertising medium (newspaper, poster, billboard, slide or handbill) illustrating if possible an Ideal wall home and inviting those interested to call or write at manufacturer's office for literature and information.

Second: Build an exhibit that will show the merits of Ideal construction. (This display could well be laid up in both black and white mortar and should be at least three feet high and five feet long to give a good idea of Ideal wall's appearance.)

Third: Have some free literature that explains the construction and will give ideas of finished homes.

Fourth: Make connection with contractors to whom people can be sent and who will furnish estimates and follow up prospects.

Every effort should be made to bring the public to the manufacturer's office and wherever possible to furnish applicants direct with estimates of complete construction costs—at the same time recommending builders who will contract for the work.

Good advertising persistently carried on is accumulative in its results and pays for itself over and over again. It carries the message of organized business to the buying world and molds public opinion more than any other commercial factor.

And so, when we know that the Ideal wall is so chuck full of merit that all we have to do is to tell people about it—we must not stop the "telling" process. First, because that's our part of public education; and, second, because it's the surest way to meet competition.

* * *

The first brick in America were made by the Virginia Colonists in 1611.

The Building Situation

ACCORDING to official tabulations, the gain in construction operations in Massachusetts during March was 118 per cent., as compared with the corresponding month last year, and an equal, if not heavier advance has been made in April work in the state, records for which are expected to be available at an early date. Contracts awarded in the entire New England district during March aggregated $27,795,000, an increase of 78 per cent. over the month of February, and more than 100 per cent. in advance of the same month last year. Of the total noted, 45 per cent. was for residential structures.

Contracts given out in the New England territory during the early weeks of April average $13,000,000 a week, as against about $4,000,000 for the corresponding period of 1921. There is a volume of work in sight approximating more than $125,000,000, according to a careful canvass of architects' and engineers' offices. Awards for the bulk of this aggregate will be placed during the spring season.

Common brick is quoted as follows in the Boston market: To contractors, in carload lots, delivered, $16 a thousand; delivered from dealers' yards in Greater Boston, $17; New York brick, $18 per thousand; and first-grade New England common, $21.

Selected water-struck brick, $32 and $35, delivered on the job; face brick, rough and smooth varieties, $48 to $55, delivered; paving brick, $46.50 for three-inch material, and $52.50 for four-inch stock. Fire brick, No. 1 standard, $50 a thousand, on the job, and $60 per thousand for higher grade selections.

Big Gain in New York Construction

Construction contracts awarded in Greater New York during March totaled $61,667,000 for the five boroughs, an increase of over 60 per cent. in the figures for February, and about 3½ times the total for the corresponding month of last year. Residential operations for the month were 62 per cent. of the aggregate, or $38,045,000.

April operations are exceeding those of March to a marked degree, and weekly contract awards in this district are averaging from $16,000,000 to $24,000,000.

Following the approval of a new law by Governor Miller, permitting New York life insurance companies to invest funds up to ten per cent. of their assets in residential construction, the Metropolitan Life Insurance Co. has authorized the construction of 50 multi-family dwellings in Queens Borough to cost $6,000,000, and other insurance companies have announced intentions of investing equal and greater amounts in similar group structures. The aggregate sum is expected to add well over $25,000,000 to New York's building total in the coming months.

The demand for common brick at New York is heavy and strong; current distribution is absorbing weekly practically all arrivals from Haverstraw and other Hudson River points, totalling from 30 to 35 cargoes.

Current brick quotations at New York are as follows: Best grade, Hudson River stock, $16 to $16.50, per thousand, wholesale, in cargo lots alongside dock; delivered on the job $18 and $18.50; Raritan common, $16.50 to $17, wholesale, and $18.50 to $19, delivered on the job. First-grade fire brick is selling for $60 to $70, delivered. Face brick ranges from $43-$45 for Colonials to $55 for buff and red rough texture. In the wholesale market, hollow tile, 4x4x12 inches, is selling for $111 per thousand blocks, in carload lots; six-inch material is $166.70; and 8x12x12-inch stock, $208.

Brick Production Under Way

A number of the seasonal yards at Haverstraw, Kingston, East Kingston and other Hudson River points, have commenced production and will develop a considerable increase over the output last year. Despite the coal strike, the fuel situation remains satisfactory.

During the first quarter of the year, residential construction at Newark, N. J., has rounded out a total of nearly $6,000,000, or about double the figures of a year ago. All records for housing operations are being broken in this section, and the coming months bid fair to exceed the aggregate for the earlier weeks of the year; the present average is running close to $500,000 a week in permits issued at Newark, over $300,000 of which is for apartments and residences.

Bricklayers and plasterers are in great demand, and speculative builders are giving $10 and $12 a day for labor of this character. Tile layers are next to impossible to obtain, with some offers as high as $17 a day—and hardly any takers.

New York Shipping Brick to Jersey

New York has entered the Jersey market for brick, the Hudson River yards not being able to supply all demands, and as a consequence, there is bigger activity in production going forward than for many months past. The seasonal yards are producing at Hackensack and Trenton, and with reserves practically exhausted production is being pushed.

Hackensack yards quote around $16 at the kiln, and $18 to $18.50, delivered on the job; the bulk of distribution is going to Newark, Paterson and Passaic. Trenton producers are asking $15.50 and $16 at the kiln, and about $2 advance for delivered material. First grade water-struck brick is $30, and rough and smooth face brick, $50 and $55. Fire brick is being quoted at $60 upwards.

Philadelphia Building Swings Upward

With a construction record of over $9,000,000 for the month of March at Philadelphia, Pa., operations have taken a swing upwards, and increased records have been established during April. The March total showed a gain of over 220 per cent. as compared with the corresponding month of a year ago.

Common brick is selling at $16 a thousand, wholesale, in carload lots at Philadelphia, while delivered material is priced at $17 and $18. Face brick is $50 a thousand, with exceptionally fine stock at $55 and $60. Fire brick is $60 and $65.

Hollow building tile is quoted at $95 a thousand for 4x12x12 inches blocks, wholesale, in carload lots; 8x12x12 inches stock is $175; and 12x12x12 inches, $255.

Baltimore Progresses

April construction totals are more than equalling the March figures at Baltimore, Md., and according to advance statistics, the month is expected to round out at close to $5,000,000. The heaviest operations are in brick dwellings, and blocks of such structures are now in progress in the new annex.

Frostburg, Hagerstown and other cities in the state are showing record building figures, with sufficient projected

(*Continued on page 723*)

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

AMERICAN POTTERY

IN EARLY TIMES in our country, pottery was made to supply the modest needs of the colonists. The best known of this was made in West Virginia. There were coarse earthenware utensils made to take the place of the wooden trenchers and many molasses and preserve jars, but they often have a charm not found in similar articles now made by machinery. Early American pieces may be found at the Art Institute in New York, and no one can deny the fascination of the highly glazed Bennington ware made in the shape of chocolate colored dogs and fat old gentlemen holding mugs, or the agraffiato pie plates incised with native equestrian figures.

Rookwood Oldest Ware

The oldest of our potteries now existing, the Rookwood, is no doubt the best known. This was established in Cincinnati in 1880 by Mrs. Maria D. Storer, who named the pottery after her father's estate. In the early days it was the fashion with the ladies of Cincinnati to decorate pieces made and fired at the pottery: Mrs. Storer had unusual initiative gifts, and in nine years Rookwood carried off a gold medal at the Paris exposition. Later it passed into the hands of others, but it has always been an art enterprise, where everything is done to develop the highest type of art unaffected by efforts to win trade. Rookwood was the first to make a texture glaze which permits the use of colors in decoration beneath the delicate veil of glaze. This ware is difficult to make, and it is said that few commercial potters could afford to take the risks which the Rookwood company does, as so many pieces are destroyed in the making.

Pottery Highly Expressive Art

The Pewabic pottery made in Detroit Mich., also owes its beginning and success to a woman. The name of this comes from the Indian word for copper colored clay. In the quaint little seacoast town of Marblehead, Mass., there is made a ware of great delicacy and refinement. When hardly a boy, A. E. Baggs, who is now the leading spirit of this pottery, was called in to establish work in clay as a means of interesting nervous patients when under medical care. Another ware, the Paul Revere, originated in the same way in Boston. This is easily recognized from its decoration, which consists of animals, quite in a humorous note. Tho made in bread and milk bowls and plates for children, decorated with bunnies, crowing cocks and snow white camels, this ware has an appeal to the adult as well.

So the art of pottery may be a very indigenous art, utilizing the clay which is near at hand, and some of our potteries have further attempted to make it indigenous by using as their motifs in decorations the plants and flowers about them. Thus pottery may be one of the most expressive of our arts.

What gives more distinction to a room than a well shaped and beautifully glazed vase or bowl which may be useful for holding flowers, as a base for a lamp or as a receptacle for holding various articles we use to decorate our home.

Many schools have undertaken the making of pottery. One of the best known of these has been Newcomb college in New Orleans, where students carry out their designs in plastic form. Their pottery is made in quiet blues and greens. Other American wares are Dedham, Fulper, Van Briggle, Binns, Walrath, Grueby (now no longer made), Haeger and that of the North Bennett Street Industrial School of Boston. Chicago pottery of national reputation has been the Teco ware, made from native clays at Terra Cotta, Ill., and it is from a combination of the first two letters of the two words, Terra Cotta, that the name originated.

* * *

CONDITIONS IN GENERALWARE INDUSTRY

It is not likely that the kiln capacity of the generalware industry will be increased this year, altho in the china branch and sanitary some extensions are contemplated. So far as is now known, the only new generalware kilns contemplated for 1922 will be erected by the Ontario Pottery Co., at Bowmanville, Canada, and in the sanitary end, two tunnel kilns are to be built by the Zwermann Co., at Robinson, Ill.

During 1922 there was activity in the erection of generalware kilns on the Pacific Coast, seven being built by the Empire China Co., at Burbank, Cal., and three at the plant of the Homer Knowles Pottery Co., Santa Clara, Cal. These kilns will be an addition to the 1922 output of generalware, yet construction was completed last year.

There have been intimations of some generalware kilns being erected in the South, either at Macon, Ga., or Johnson City, Tenn., but these suggestions are far from becoming a reality. It has been said that some East Liverpool, Ohio, interests are concerned in the plan to build a shop at Johnson City, while the story from Macon appears to be only along the line of suggestion.

In the Ohio district, no thought of additional kilns is being considered, it is said. There is one five-kiln plant unit in the East Liverpool district now idle, but this is expected to be placed on the active list within the next few months, business conditions governing the starting of this unit.

In the vitreous hotel china branch of the industry, the tunnel kiln plant of the Chelsea China Co., at New Cumberland, W. Va., is on the inactive list at present, while other plants associated with the same line are seemingly active and reporting an active demand for their production. Any increase in the kiln capacity in this branch of the industry also seems unlikely this year.

The general business situation in the generalware industry

Editor's Note—Reprinted from Bronx (N. Y.) Home News.

today is just as manufacturers anticipated last January. Distributors did not order in liberal volume during the last quarter of 1921, and at the close of the year shelves and bins were pretty well cleared of old stocks. Then came the January buying. During that season, however, a lot of "shopping" was done by the buyers, and instead of anticipating requirements months in advance as had been their custom during the years of the war period, more or less caution was used.

The result has been that the trade has come into the market with more frequency, either personally or by mail, so that in the end, the majority of all generalware potteries have from three to four months' advance business on file.

* * *

POTTERS GETTING MORE BUSINESS

A decided improvement in the general ware branch of the American pottery industry has been noted, since the close of the first quarter of the year. Operations in the trade as a whole are ranging from 90 to 95 per cent. of capacity. High-grade bordered dinnerware is in active demand and a majority of manufacturers have advance orders on file for third and fourth quarter delivery. The volume of business in this line, however, is less than in the corresponding term of 1919. An encouraging feature of the pottery industry is the whiteware division, including both semi-porcelain and vitreous hotel china. During the last six weeks receipts of a rather large amount of new orders has been reported. It will be remembered that business in this division was quite dull not very long ago.

It has been estimated that during the last eight weeks more than 1,000 tons of dinnerware have been shipped to the South via the water route from Pittsburgh to New Orleans. These shipments are assembled at Cincinnati and transferred to thru New Orleans packets.

* * *

POTTERY CONDITIONS IN ENGLAND

The tile trade in the pottery districts of England is improving rapidly, all the big firms now working five days a week on substantial orders now coming in and which run into some thousands of square yards mostly for the foreign market. Orders for building tiles from South America are increasing each week. During the war South America was a big purchaser of Hanley tiles, but in the past two or three years this business fell right away. Now it is coming back by leaps and bounds. World-wide building and healthy price cuts, the industry here considers, is responsible for the renewed demand for this pottery line.

The pottery industry as a whole is in a much healthier condition in England now. By agreement wages recently were stabilized until March, 1923, the only exceptional cost for raw materials being that of coal which is still maintained at a high level. A remarkable phase of the industry here is the continued scarcity of orders for home use. The industry, as a whole, is occupied mainly with goods for export. The February shipments totaled around $2,500,000. In January they were more than $3,000,000. These monthly export shipments, however, are higher than they were in 1920 and in 1921.

Of all the foreign markets for pottery the United States continues the best, the monthly shipments to that country averaging $500,000. On the other hand business in pottery ware with Canada and with South Africa shows a decline. Other British colonies show an improvement so far as purchases of English pottery goods are concerned. Promising inquiries are coming in from Australia and the United States in connection with general earthenware supplying dinner, tea, breakfast, toilet and other wares and the firms supplying this demand are those concentrating on specialty lines with new and striking patterns based on sound design and craftsmanship. The makers of middle-class "fancies" are beginning to sit up and take nourishment again after being in the dumps since May, 1920, and the indications are that the public is again buying decorative pottery ware and that retailers are stocking up again as a consequence. The sanitary ware branch of the industry also reports an improved demand due probably to the general desire for modernizing old buildings apart from the legitimate demand created by the construction of new and modern homes. A lot of orders in this respect are coming in from foreign climes. Germany, the other big pottery producer of Europe, is finding the general demand for pottery goods on the up-grade and is planning accordingly. As with Britain she finds the bulk of the present orders emanating from across the seas. It is believed that this stimulated demand is no flash in the pan but the beginning of a more consistent purchasing era.

* * *

MAKING GEORGIA CLAY EQUAL TO ENGLISH

English china clay is preferred to Georgia kaolin by many American potters. In comparing the two it is found that the English clay disintegrates in water more readily, produces a body which casts more satisfactorily, gives lower drying and bisque losses and requires less linseed oil to produce a spreading condition for oilcloth and produces a paper of better finish and more resistant to moisture. In preliminary work by the Bureau of Mines it was found that after calcining Georgia kaolin to low temperatures (500-600 deg. C.) it possesses properties similar to the English china clay, i. e., its adsorptive properties are decreased to that of the English china clay and the rate of capillary flow and the permeability of water is increased. Further tests are to be made to determine its commercial feasibility. The effects of ageing the calcined clay in air and water are to be studied to determine how far the calcined clay will revert to its original state and also to study the varieties produced by different calcination tempers.

* * *

TAKE OVER OLD WILLETS POTTERY

The General China Ware Corporation, Trenton, N. J., has been organized to take over and operate the old Willets pottery in that city. The company is seeking to dispose of a bond issue of $400,000, to provide funds for betterments, operations, and so forth. The plant was acquired some time ago by the American Pottery Co., which is now in the hands of a receiver.

* * *

AMERICAN WARE STANDS TESTS WELL

The Bureau of Standards at Washington, D. C., has issued the following announcement concerning specifications for "China Tableware:"

"The testing of the various wares has been nearly completed, and some interesting results have been obtained which formed the basis of a paper presented at the recent meeting of the American Ceramic Society. Based simply upon the work done by the Bureau of Standards, which necessarily covers only a limited variety of wares, it would appear that domestic hotel china is very much superior to the French, German and English in ability to withstand sudden blows, as indicated by impact tests.

"In this respect also, the American vitreous china and earthenware for household use are also much superior to the French, German and Japanese wares upon which tests have been carried out.

"In regard to crazing and cracking from sudden temperature changes, the American hotel wares did not craze and only cracked at the highest temperatures employed. The English wares crazed easily but did not crack, while the French and German wares did not craze but cracked at the lower temperatures used in the test.

"The American earthenware, with some exceptions, did not craze during the standard test, but crazed at the higher temperatures which were employed for comparisons. Altho the French, German and Japanese household wares did not craze, they fractured from sudden thermal shock.

"It has been found that the design of the rolled edge and the angle of inclination of the rim of hotel plates has as much effect on the ability to withstand chipping as the properties of the body from which the plate is made. The glazes now in use appear to be sufficiently well constituted chemically to withstand the alkaline solutions used in dish washing."

* * *

POTTERIES NOT AFFECTED BY STRIKE

The coal strike with its consequent shortage of coal holds few terrors for the potteries in the Sebring, Ohio, district. All plants in this district are working practically to capacity. Oil burning equipment has been installed in the kilns of all the five potteries, and later oil will also be used under the boilers. The Limoges China Co. is preparing to fire its new continuous kiln, which is a great development in the china ware industry. According to W. H. Gahris, president, this kiln will in a few years revolutionize the firing of pottery ware, and is already fast supplanting the old type of periodic kiln.

* * *

POTTERY IMPORTS DECREASE

During the last eight months ending February 28, there has been a marked decline in the importation of ceramics, such as dinnerware and novelty pottery. In fact the decline has been more marked during this period than has been experienced for years, the war period of course being excluded.

For eight months ending February last, ceramic importations from all countries had a valuation of $8,104,401. For the same period ending February, 1921, the valuation was placed at $8,768,299, or a loss for the period of $663,898.

Germany, however, shows decided gains in selling ceramics to the United States, and it has just been disclosed that this country of all others is the only one that shows an increase in its sales to the American importing houses and American buyers, both for the corresponding months of February and also for the corresponding eight month period.

For the eight month period ending February 28, 1921, Germany sold to American buyers ware amounting to $751,430, and for the corresponding term ending February 28, last, this increased to $1,323,345, or a gain of $571,915.

Contrary to expectations, however, Japan and England have lost in American trade. For eight months ending February 28, 1921, Japan sold ceramics to America to the value of $2,674,781, and for the same term ending February last its sales amounted to $1,910,775, or a loss in business of $764,006.

For eight months, ending February 28 last, England sold the United States ceramics valued at $408,529, and for the same term ending February, 1921, its sales amounted to $439,277, or a loss of $30,748 for that corresponding term.

Less French ware is being received in the United States now than ever, for during February last the valuation of importations has been placed at $47,193 as against a valuation of $80,084 for the same month in 1921.

* * *

CALIFORNIA POTTERY INDUSTRY GROWS

Walter W. Bradley, of the department of statistics, points out that the production of brick for 1921 suddenly doubled, and that the indications are for another great increase for 1922. While the value of pottery clay increased in 1920 only $195,000, the increase has been accelerating ever since. The value of pottery products in 1920, however, increased nearly $1,900,000 making a total of $3,900,000, and has been rapidly increasing ever since. There has been some difficulty in locating good pottery clays, but the persistent efforts seem to have been successful, tho clays to equal some of the best English clays have not yet been found, and these are being used for mixing purposes.

Mr. Bradley states that the demand for the pressed brick and terra cotta and hollow tile, and so forth for building purposes, has caused the development of some excellent materials.

* * *

PITTSBURGH TILE COMPANY FORMED

The West End Mantel & Tile Co., Pittsburgh, Pa., is being organized by John Kertes and F. Fla Havhan, to manufacture ceramic tile, and other kindred burned clay products. The company is represented by Conrad & Fla Havhan, 607 B. F. Jones Law Building, Pittsburgh.

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KEYSTONE POTTERY INCORPORATES

The Keystone Pottery Co. has been organized at Zanesville, Ohio, with a capital stock of $25,000.

* * *

FLORIDA PLANT TO EXPAND

The Orlando (Fla.) Potteries are planning for the erection of an addition to their plant for increased production. The kiln capacity will be increased, and new equipment, estimated to cost about $10,000, installed in other departments. N. P. Yowell is president. Gamble & Bryan, East Liverpool, Ohio, are engineers.

* * *

GOLDING STARTS NEW COMPANY

Charles E. Golding, manager of the Golding Sons' Co., Peace Street, Trenton, N. J., producers of feldspar, flint, and so forth, has resigned to become head of a new company, to be known as the Golding-Keene Co., to engage in a kindred line of business with the pottery trade. The company is capitalized at $250,000, and will operate a feldspar pulverizing mill at Keene, N. H., where newly opened feldspar deposits are now being worked. Mr. Golding will maintain headquarters at Trenton.

* * *

FINE CLAYS IN SASKATCHEWAN

In a recent issue of the New York Times, M. L. Moyer of Regina, Canada, was quoted as saying that there are unlimited deposits of clay of the finest quality accessible in Saskatchewan. Mr. Moyer stated that American tile and marble manufacturers were much interested in the report and are planning to send their representatives to Canada to investigate the new field of raw material. These deposits have untold possibilities, Mr. Moyer says.

* * *

MAKES TERRA COTTA GARDEN FURNITURE

Gladding, McBean & Co., San Francisco, Cal., is publishing a price list of ornamental garden pottery and furniture manufactured of terra cotta. All varieties of vases, bowls, benches, pedestals, and so forth, are listed. This is a field which few terra cotta companies have entered to date, and as a consequence most garden furniture now in use is either wood or concrete.

* * *

WANT SAMPLES OF CALIFORNIA CLAY

The West Coast Porcelain Manufacturers, Henry Weiss, manager, of Northbrae, Cal., has established a plant on the S. P. line for the manufacture of sanitary ware, and is importing clays from Amador and Riverside Counties, and England. The company is inviting the submission of samples of clays from all parts of the state.

The Superintendent

Helpful Hints for Practical Men
Whose Problem is Maximum
Production with Minimum Cost

A USEFUL I-BEAM CHART

Here is an I-beam chart that tells all about I-beams almost at a glance. It is much quicker than a table for solving many problems, such as are met almost every day.

I-beams are very much used these days and will certainly be used more and more. They are useful for all sorts of supporting work—for holding concentrated as well as for uniformly distributed loads. The I-beam is the lightest and most economical steel beam for most purposes.

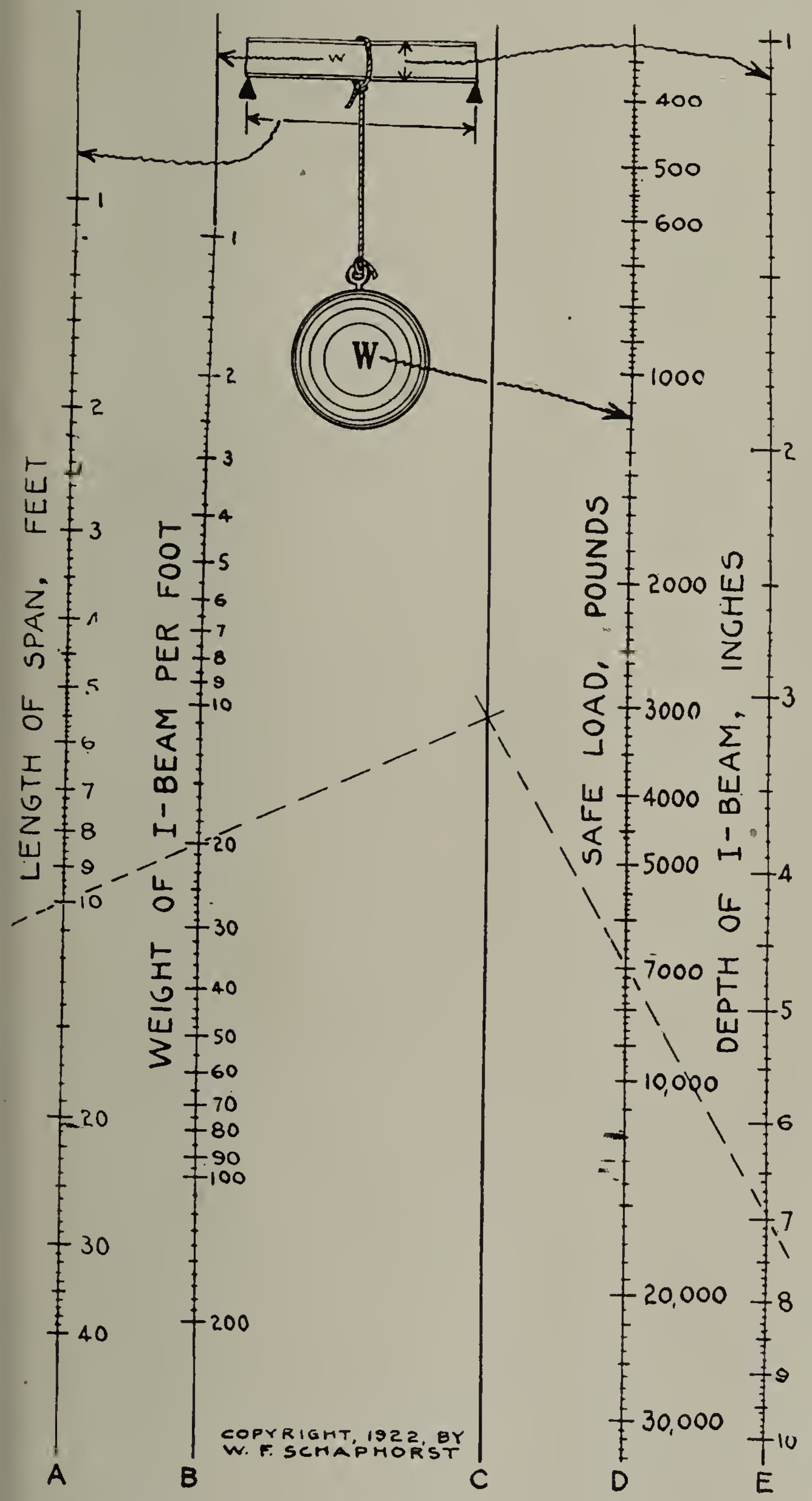


Chart to Determine Safe Bearing Load of Beams.

Inasmuch as a concentrated load, as shown in the sketch, represents the very worst conditions, requiring the LARGEST beam for the given load, this chart is based upon concentrated loads for the sake of safety.

The wavy arrow lines running from the sketch to the vertical chart lines show at a glance just what each chart column means. Thus column A gives the length of the span in feet and includes all lengths from one foot to 40 feet. Column B gives the weight of the I-beam in pounds per feet and includes all weights from 1 lb. to 200 lb. Column D gives the safe load of the I-beam in pounds and varies from 400 to 30,000 pounds. Column E gives depths of beams in inches from one to ten inches.

For example, to show how the chart is used, let us suppose that a weight of 4,000 pounds must be lifted. A seven-inch I-beam weighing 240 pounds is available. It is 12 feet long and therefore weighs 20 lbs. per foot. The minimum distance between supports that can be obtained for the lifting operation is ten feet. Is the I-beam strong enough to lift the 4,000 lb. load?

The dotted lines drawn across the chart show how the problem is solved by means of the chart. Run a straight line thru the ten foot mark (Column A) and the 20 lb. (Column B) and locate the intersection in Column C. Then from the intersection in Column C run over the seven-inch (Column E). The intersection thru Column D shows that the I-beam will support 7,000 pounds. Since the load to be lifted is only 4,000 lbs., the beam is amply strong. In fact, the reader can easily find by applying the chart that a four-inch I-beam, all other conditions being the same, would safely support the load of 4,000 pounds.

Similarly, it is easy to ascertain the maximum allowable span when the factors in Columns B, D and E are known. Or, the necessary weight per foot of I-beam may be determined when the factors in Columns A, D and E are known. Lastly, the depth of beam is determinable when the factors in Columns A, B and D are known.

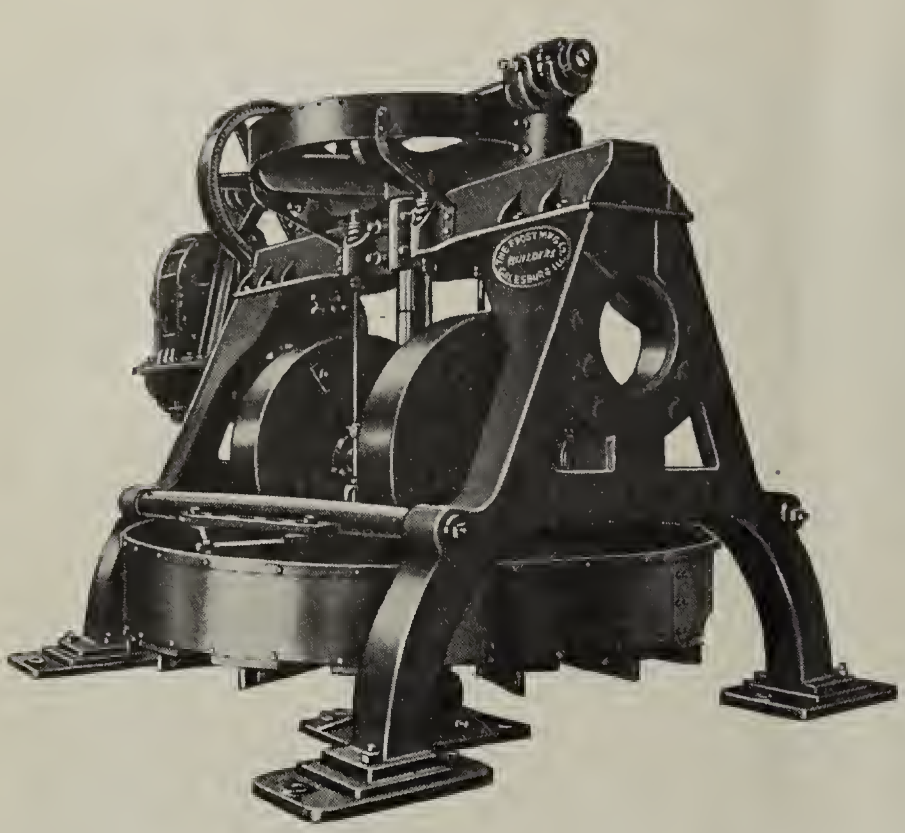
For loads that are "uniformly distributed"—not concentrated—the safe loads in Column D may be multiplied by two. Thus, the above described beam will support a uniformly distributed load of 14,000 pounds, or 1,400 pounds per running foot.—By W. F. Schaphorst.

⁂

COAL IN ILLINOIS AND INDIANA

Coal in Illinois is practically all produced from three principal seams, known by numbers, as 2, 5 and 6. While the total number of seams in the field is about 22, it is only these three that are thick enough to afford profitable mining. There is a little production from the other seams, but the amount is too small to be considered. The production from seam No. 6 is much greater in tonnage than from Nos. 2 and 5, but the two latter seams have the best quality of coal.

In a broad way there are three general divisions of quality. Coal from Jackson County, seam No. 2, and Saline County, seam No. 5, ranges from 12,000 to 13,000 B. t. u. for all grades, from screenings to lump and prepared sizes. Coal from Williamson, Franklin and Perry Counties, east of the town of Duquoin, ranges for the same grades from 11,000 to 12,000



DO YOU KNOW?

That Frost Pans aim to give you the best quality of material, workmanship and fabrication that can be obtained.

SEND US YOUR INQUIRIES

THE FROST MFG. CO.
GALESBURG, ILLINOIS.
ESTABLISHED 1851

Let us quote you some real prices on—

KILN BANDING

We have had ten years' experience in the manufacture of kiln banding. Consequently, we are able to produce it at rock bottom prices and still maintain the highest degree of quality.

Our clay cars are of distinctive value to progressive clay products manufacturers also.

May we send you our literature?

GALLAGHER BROTHERS
Uhrichsville, Ohio

B. t. u. Coal in the remainder of the state ranges from 10,000 to 11,000 B. t. u. The state, however, may be further divided into a number of fields on the basis of quality, and the seam from which the coal is produced is shown in the table, in which the different coals are identified by locality and seam number.

The Murphysboro coal is from the town of Murphysboro, in Jackson County; Harco coal from the town of Harco, in Saline County; Harrisburg coal from the towns of Harrisburg and Eldorado, in Saline County. Third Vein coal is from La Salle, Bureau, Marshall, Grundy and Mill Counties; Springfield from Sangamon, Menard and Logan Counties; Peoria and Fulton from Peoria, Fulton and Tazewell Counties. The No. 6 seam, other than given in the Williamson, Franklin and Perry group, is from the counties of Vermillion, Sangamon, Christian, Macoupin, Montgomery, Madison, Bond, St. Clair, Clinton, Marion, Washington, Randolph, Jackson and Perry west of the town of Duquoin.

TYPICAL ANALYSIS OF ILLINOIS AND INDIANA COALS

Illinois	Seam No.	Moisture	Ash	Volatile Matter	Fixed Carbon	Sulphur	B.t.u.
Murphysboro	2	9.28	5.72	33.98	51.02	1.29	12,488
Harco	5	6.83	8.03	33.24	51.90	2.24	12,436
Harrisburg	5	7.06	8.47	35.42	49.05	2.73	12,299
Williamson, Franklin and Perry Counties	6	9.60	9.05	34.50	46.85	1.84	11,648
Third vein	2	16.03	6.67	38.70	38,60	2.87	11,058
Seam No. 6	6	12.49	10.18	37.47	39.86	3.67	10,924
Springfield	5	14.55	10.74	37.06	37.65	3.82	10,526
Fulton and Peoria	5	15.92	10.53	36.45	37.10	3.09	10,424
Indiana.							
Fourth vein	4	13.55	7.85	32.81	45.79	0.93	11,578
Fifth vein	5	11.05	12.05	35.60	41.30	4.19	11,196
Seventh vein	7	13.53	10.76	34.80	40.91	3.15	10,948
Sixth vein	6	12.09	12.17	33.91	41.83	2.97	10,987
Third vein	3	7.88	14.20	36.85	41.07	5.14	11,146

In Indiana the fields are differently disposed, each seam in greater or less measure being operated from the north to the south end of the field, the lower seams being particularly worked to the east of the field, near the outcrop. In certain localities two or three seams are worked, so it is not feasible to designate by locality as in Illinois, where the operations are confined to a single seam in each locality, because as a rule there are no localities where more than one seam is workable. In Indiana a number of seams could be penetrated by one shaft.

In the table the analyses given are from reports of the Illinois State Geological Survey for Illinois, and for Indiana from Bulletin 22 issued by the Bureau of Mines. The table represents mine-run coal. Prepared sizes are of better quality of course, but bear the same relation to mine-run in all of the fields, so the relation of quality between fields holds for all corresponding grades of preparations, with two exceptions. The ash content of the Third Vein really represents prepared coal, instead of mine-run, but the figure given is the most authoritative available. Also, Franklin County has a certain locality where sulphur is enough lower than the average to justify mention.—*A. Bement, Repair Department, Commonwealth Edison Co., Chicago, Ill., in Power.*

⁂

CONE 8 GIVES GREATEST STRENGTH

In preliminary work of the Bureau of Mines Ceramic Experiment Station at Columbus, Ohio, it was found that maximum strength is developed by firing clays to cone 8, regardless of the degree of vitrification. The tendency of these bodies to weaken when fired above cone 8 may be due to the formation of sillimanite which begins to develop about this temperature. A body of maximum cross strength is developed by selecting a body which has its maximum shrinkage and minimum porosity when fired at cone 8. The observations so far have been made on fire clays and bodies of the fire clay type. Whether the results obtained on these clays and mixtures are in accordance with those of porcelain and whiteware bodies will be determined in further work.

The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

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WHITEWASH ARTICLE PROVES VALUABLE

Prompted by the many requests which came in in recent weeks, asking for means to combat and eliminate scumming and efflorescence from brick, Brick and Clay Record prepared an article covering practically all angles and phases of this evil and suggesting remedies. That the article has been of some value is evidenced by letters which have been received from companies who have been troubled with whitewash. We reprint herewith excerpts from two letters from prominent manufacturers who have found the information given in that article of value in eliminating this evil. One wrote as follows:

"The article which your office has prepared on efflorescence and scumming is very valuable, and we think answers our questions correctly. We feel quite sure that our trouble comes from the sulphur in the coal that we burn.

"We thank you very much for your valuable suggestions."

Another acknowledgement was received which stated:

"We wish to thank you for the article in regard to scumming of brick. This article has given us some very good information and we believe will be of very great use to the industry."

☙ ☙ ☙

AN OUTSIDER'S VIEW OF THE INDUSTRY

It is particularly pleasing sometimes to get the viewpoint on your industry that men outside of it have. Especially is this true when it comes from a man who has been related to an industry considered on a high plane of development.

Below is reprinted a letter received at the New York office of Brick and Clay Record, and which was written by A. C. Scully, secretary-treasurer of the Lancaster (Pa.) Iron Works. Mr. Scully is a member of the Scully family who have for so many years been well known in connection with iron and steel interests in Chicago.

"We are only too glad to tell you of the progress which our company has been making.

"At the outset, let me tell you that our sales for the first quarter this year were just nine times what they were last year over the same period, and that isn't the best part of it either. It looks as tho our sales are going to continue, because we have already done as much business in the first three months as we did all of last year, and we have some wonderful orders and prospects ahead of us. Needless to say, our equipment and our AutoBrik Machine are a success, but they wouldn't be such a howling success if it weren't for the fact that there is a growing demand for building brick. It is true that this demand isn't the same the country over, but it is particularly true on the Hudson River, and that after all is our best and nearest territory.

"Looking at the brick industry 'by and large,' what strikes me as being of the utmost importance is the fact that the business is being put more and more on a scientific basis. Time was, and not so very long ago either, when brick were sold without any regard whatsoever to their cost. Overhead and depreciation were unknown words in the brick industry, that is, outside of the comparatively few big fellows. Now the little fellows have gradually sunk and disappeared and only the progressive, intelligent brick manufacturer is left, and he realizes the importance of knowing his costs, and improving his product, and of installing machinery that gives him a uniform, year round production, independent of labor. Labor in this country used to be cheap and good, but that time is past. Education and oft times too much of it, has raised labor a notch higher, and immigration has not replaced the hundreds of thousands of cheaper men that can be used, so that today the big problem of manufacturing anything is labor, and if ma-

Electric Motors and Generators
for all requirements of the
Brick and Clay Industry

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ERIE PENNSYLVANIA

Service-Sales Offices
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Sales Agencies
CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

Good Clay
Good Coal
Good Markets
Good Shipping Facilities

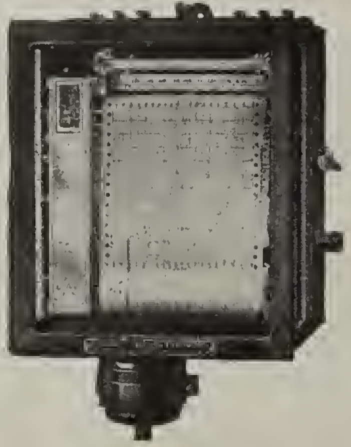
The territory along the Pittsburgh, Lisbon & Western R. R. has all the advantages necessary to make your new plant a success.

Desirable land carrying both clay and coal can be had for from Sixty to Eighty dollars per acre.

"THE HOME OF DARLINGTON BRICK"

Information as regards rates and plant sites gladly furnished

THE PITTSBURGH LISBON & WESTERN R. R. CO.
Lisbon - - Ohio



WHAT ARE YOUR
FUEL WASTES?

Accurate knowledge of your temperatures at all times is an absolute necessity if you are to successfully manufacture a quality product.

BRISTOL'S
Pyrometers

are accurately and ruggedly constructed,—thus they are absolutely reliable even under the most severe conditions. They record and indicate temperatures up to 3000 deg. Fahr. and enable your burners to hold more even fires and produce a better product with each burn.

Ask today for full information.
It will not obligate.

The Bristol Company
Waterbury Conn.

STEVENSON

DRY PANS
WET PANS
ROLL CRUSHERS
SEWER PIPE PRESSES
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Bulletins on Request

THE STEVENSON CO.
Wellsville Ohi

chinery and equipment such as ours can be purchased, that will make a man practically independent of this item, it doesn't take long to convince him and sell him.

"A brick is a good honest product, and there is no reason why a fair return cannot be had for money invested in manufacturing. Take our own locality, for instance. We are a great brick center, are practically built of brick. There used to be some 30 local yards here. Today there are but two; one the modern Lancaster Brick Co., which we built, and the other which has been in business many years and which is using Martin machinery, but open air drying, so that it isn't an all year plant.

"This same thing is happening all over the country. The old obsolete yards are going out of business and it is only the man with newer and up-to-date ideas that remains. As a matter of fact, there is no finer or more durable building product than brick, and it has been time tested by centuries, not months or years. It is inconceivable to me that there can be any progress and prosperity in the United States that doesn't carry its share to the brick industry. We are way behind in building, and it will take years to catch up. Not only that, but the cycle of just desserts is moving around as surely as the hands of a clock. Every industry that was injured and suffered during the war is going to have its turn at prosperity, and it is working out so, and every industry that enjoyed so-called prosperity during the war has had a mighty severe drubbing, and only those that have deserved to live have weathered the storm. I am glad that I am in and allied with the brick business. They are an honest lot of people. They have to do with the soil and somehow or other all who are in touch with soil absorb something from it that makes them real people."

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

DEATH TAKES ELI J. SMITH

Eli J. Smith manufacturer of brick and drain tile at North English, Ia., has passed away. Mr. Smith was one of the oldest residents of North English and was very active in civic development work, He was senior member of the firm of E. J. Smith & Sons.

FRED PARKER CHANGES POSITION

Fred Parker, formerly of Martinsville, Ind., has taken the position as manager of the Iowa Clay Products Co. at Eldon, Ia.

A. D. COCHRAN LEAVES McFEELY

A. D. Cochran, formerly connected with the McFeely Brick Co. at Boliver, Pa., has resigned his position with that company to become a member of the sales force of the Bonnot Co., Canton, Ohio, manufacturers of clay machinery.

INSTALLING NEW STEAM EQUIPMENT

The Gadsden (Ala.) Clay Products Co. will install new steam power equipment at its plant, including engine, boiler and auxiliary apparatus. Other improvements will also be made. Gordon Hood is treasurer and general manager.

PROPOSE $7,000,000 SCHOOL BOND ISSUE

On May 12 the people of Birmingham, Ala., will be called upon to vote on a $7,000,000 bond issue for the building of a number of new public school buildings and the enlargement of schools already built.

The indications are that bonds will carry and if this is the case millions of Birmingham made brick will be used in the construction of school buildings this fall.

WANTS SEASONAL POWER CONTRACT

In a petition to the public service commission, filed by the Huntsville (Ala.) Brick Co., this concern asks for an order requiring the Alabama Power Co. to execute a seasonal contract whereby power will be furnished during the brick plant's operating season. The brick company alleged that it disposed of its steam plant at the solicitation of the power company, which furnished its electricity during its operating season, but that the company is now insisting on a contract effective 12 months in the year with a minimum charge of $115 a month whether any power is used or not. The company insists that such a contract is not to the interest of the brick plant because weather will not permit operations during December, January and February.

SEWER PIPE PLANT WORKING CAPACITY

The Southern Sewer Pipe Works, located in North Birmingham, Ala., continues to operate at about 100 per cent. This is one of the largest sewer pipe works in the South.

This firm is shipping sewer pipe of all sizes to practically all of the southern states, shipments being made almost daily. The clay used by this works is said to be of the very best quality for sewer pipe making, hence their orders are constantly on the increase.

This is one of the clay product plants that never closed on account of the depressed business conditions. In fact when business conditions were at their worst a trip to this plant would remind one of the prosperous business conditions of war days. The kilns used are of the bee-hive type and are so constructed that any size sewer pipe can be placed in them and burned.

MANY SOUTHERN BRICK SHIPPED EAST

The beauty of Birmingham made face brick in buildings has spread to a number of sections of the north. Owing to this fact John W. Sibley, general sales manager of the Birmingham (Ala.) Clay Products Co., made a trip north recently and established agencies for the company's brick in New York, Washington and Norfolk, Va. Mr. Sibley says that with the proper freight rates, which he believes will soon be in effect, Birmingham made face brick will be sold in large numbers thruout the East.

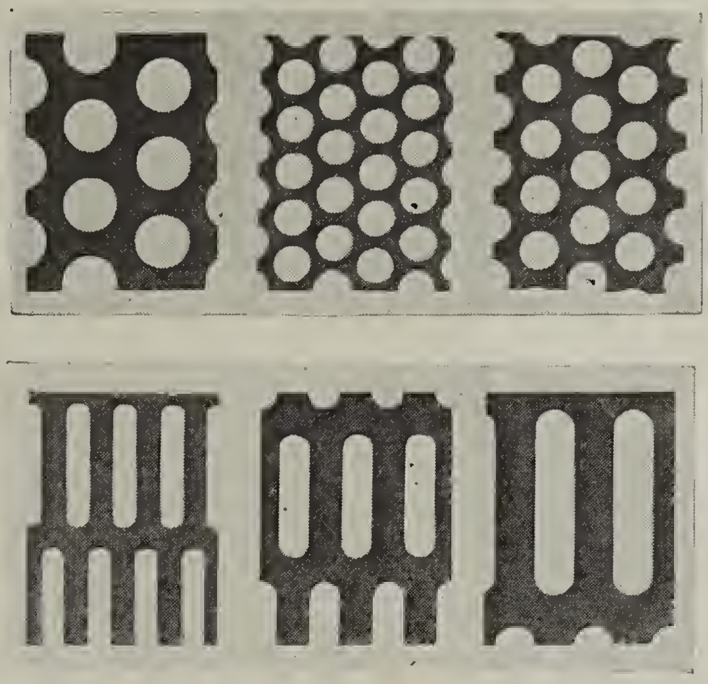
For some time past many car loads of brick annually have been shipped from Birmingham to various points in the states of Alabama, Georgia, Florida, North and South Carolina, Mississippi, Tennessee and Louisiana. Mr. Sibley says at the present time his company is receiving telephone orders frequently from points in the Carolinas, Georgia and Florida.

BIRMINGHAM DEMAND IS GOOD

Practically all of the brick and clay plants in the Birmingham, Ala., district are now in operation and are finding a ready market for their products all over the South. Hollow building tile is coming more and more into use in Birmingham, many people all over the country using it for the building of residences and business structures. Sewer pipe is being manufactured in large quantities and is proving most popular in all of the Southern states, orders going out almost daily to various sections of the South.

Paving brick manufacturers, as well as manufacturers of building brick, are predicting a good business this year. Many brick roads are to be built in Florida, and perhaps in some of the other Southern states it is said. On the whole the brick and clay manufacturers of the Birmingham district are very optimistic as to business conditions during the next 12 months.

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.
635 N. Union Ave., Chicago, Ill.
NEW YORK OFFICE: 114 Liberty St.

WOULD YOU LIKE TO MAKE BETTER BRICK ?

USE **R. & H. PRECIPITATE CARBONATE OF BARIUM** TO PREVENT SCUMMING AND THEREBY PRODUCING BRICK THAT ARE RICHER AND DEEPER IN COLOR, CLEANER AND CLEARER IN APPEARANCE.

IF YOU ARE TROUBLED WITH SCUMMING, WRITE US TODAY FOR CIRCULAR.

THE
ROESSLER & HASSLACHER CHEMICAL CO.,
NEW YORK

Chicago Trenton Kansas City
Boston New Orleans Cleveland
Philadelphia Pittsburgh San Francisco

Russell
TUNNEL KILN

Cut Your Costs

Continuous production reduces costs in the manufacture of clayware just as it does in other industries. Learn how you can cut labor and fuel costs and increase production by the continuous operation of a Russell Tunnel Kiln (Zwermann Patent.)

Write for illustrated book, "MODERN FIRING"

RUSSELL ENGINEERING CO.
Railway Exchange Bldg., St. Louis, Mo.

E-353

HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner and Grinders

Especially Prepared for Brick Making

Sales Office: CHARLESTON, W. VA.

SHIPS 2,000 TONS OF TILE MONTHLY

The Roper-Strauss-Ferst Co., which is located in North Birmingham, Ala., and which is one of the biggest manufacturers of clay tile in the Birmingham district, is enlarging and improving its plant to care for increasing business. When the work is completed this will be the most modern and the largest plant of the kind in the south, it is said.

During the world war the United States government used much of this plant's product. Hollow building tile manufactured by this company was used in large quantities in the construction of large fire proof buildings. Many tons of this tile was used during those days by the government at many places in the United States. During the war the demands of the government on the plant were so great that it was impossible to close down the plant long enough to make repairs. During the year 1919 the work of modernizing and improving the plant was commenced and this work is still going on and is now well under way.

H. M. Strauss, president of the company, stated that the company was now shipping 2,000 tons of tile per month. "With the new kilns under construction completed our output will be greatly increased," said Mr. Strauss. "We are working about 50 people, and have all along during the depression, which I think is now past. There is a noticeable increase in the demand for tile, both the interior and hollow tile and the face tile. Our main territory is Alabama, Georgia, Florida, North Carolina, South Carolina, Mississippi and Louisiana. At present we are shipping a large quantity of tile into the state of Florida; Miami taking it in large quantities.

"We look for a very good year indeed, with constant and growing increase—and we are preparing for it by adding many improvements and additional facilities," he said.

DOUBLES PLANT OUTPUT

Demand for the product of the Tucson (Ariz.) Brick Co. has increased to such an extent as to necessitate the rebuilding of the plant. Officials of the company report that they have increased their output 100 per cent. and are still behind with orders. The demand is due to renewed activity in the building industry, and there is every prospect of this activity continuing for some time.

WANTS CHANCE FOR PAVING BRICK

W. G. Buckles, manager of the Boulder (Colo.) Clay Products Co., had his efforts to introduce paving brick in Boulder, rewarded recently by the action of the Lions Club, who adopted a resolution requesting the city council to give Boulder manufactured paving brick a trial. Mr. Buckles is confident that his plant can make good to the satisfaction of the town if given a chance to prove the merits of his product.

NAME RECEIVER FOR NEW COMPANY

W. S. Hyde has been named temporary receiver of the recently organized Carbo Brick Co. of New Britain, Conn., by Judge William M. Maltbie. The company was in operation about a month.

FORM $75,000 BRICK COMPANY

The American Brick Co., Berlin, Conn., has been organized under state laws with capital of $75,000, to manufacture brick, tile and other burned clay products. The company is headed by E. M., M. F., and George A. Pickett, all of Berlin.

SHIP MANY NEW HAVEN BRICK TO GOTHAM

Large shipments of brick from the North Haven district of New Haven, Conn., have commenced and a considerable portion of the product is being shipped to New York. The nine companies in that section report larger orders on hand than for any time since the war and every machine is being operated.

GETS PERMIT TO OPERATE IN INDIANA

The Standard Clay Co., a Delaware corporation, has filed papers with the secretary of state at Indianapolis, qualifying them to do business in Indiana. The company was organized for the purpose of mining clay and other earths and manufacturing brick and sewer pipe, and $300,000 of its capital stock is represented in Indiana. Albert F. Price of Brazil has been named as Indiana agent.

EVANS BUILDERS CHANGES ADDRESS

The Evans Builders Co., manufacturers and distributors of builders' supplies, formerly at 921 Fifteenth St., N. W., Washington, D. C., have announced the removal of their offices to Baltimore, Md. The new address of the company is 308 North Charles St.

IDAHO COMPANY REPORTS BIG BUSINESS

The Moscow (Idaho) Fire Brick & Clay Products Co. reports thru its president, Thomas Hall, that more orders have been received than ever before in the history of the company. Mr. Hall attributes this partly to the increasing building operations and partly to the wider knowledge of the trade of the merits of the company's product. Orders come from the cities of western Oregon and Washington, from Spokane and from Lewiston. From the Northern Pacific Railway Co. and from the C., M. & St. P. the company is also receiving orders for brick for the lining of boilers.

DANVILLE COAL MINES OPERATING

Work will be continued at the coal mines of the Western Brick Co. at Danville, Ill., under the old agreement until such time as a new agreement is reached between the miners and operators. This action was taken by the Danville local to prevent the closing of the brick plant and throwing out of work hundreds of other men thru a shutdown. The Western Brick Co. employs about 100 men in its mines.

ATTEMPT TO CRIPPLE DANVILLE BRICK CO.

Harvey C. Adams, president of the Danville (Ill.) Brick Co., recently offered a reward of $500 for the arrest and conviction of the party who attempted to wreck the big 350 horsepower motor at the company's plant. This was the third attempt to put the big motor out of commission, the previous two having been successful. Officers of the plant believe that the man endeavored to weaken the motor so that it would give way under the strain of operation, and so incapacitate the plant after operations had begun.

WANTS NEW BANK TO BE RUN BY STATE

The Cook County Real Estate Board of Chicago, Ill., has recently adopted a resolution urging upon the governor and the legislature of the State of Illinois the enactment of a law creating a State Bank, wherein may be deposited all State and Municipal funds and the savings of the citizens, to the end that money of the people may be safely under their own control, and available for their own legitimate needs. The resolution further provides that the state create a department for the building of individual homes for the people.

BUYS CARLINVILLE CLAY CO.

H. M. Baldrige of Illiopolis, Ill., has purchased the plant of the Carlinville (Ill.) Clay Co., it is said. Mr. Baldrige will continue to manufacture drain tile, building tile and silo block, and may later add machinery and kilns to burn paving brick. Mr.

Where Men Like to Work!

It doesn't take long for the news to spread that a plant has equipped the employees with Des Moines Mittens and Hand Pads. Men like to work for that kind of firm—one that takes an interest in the welfare of the men who have to handle the rough materials.

Des Moines Hand Pads and Mittens are now back to pre-war prices. Let us send you a dozen pairs on trial.

It won't obligate you.

$4.25 Per Dozen
$48.00 Per Gross

$7.80 Per Dozen
$90.00 Per Gross

Des Moines Glove & Mfg. Co.
508 Fourth Street : Des Moines, Iowa

The Marion Rust Special Feeder Mixer Insures You More Perfect Ware With Each Burn.

This machine has successfully proved its ability to many hundreds of clay plant operators. It eliminates pug mill men, keeps your off-bearers busy all the time, and insures you MORE PERFECT WARE WITH EACH BURN by mixing and tempering the clay more perfectly.

Ask today for complete information concerning this machine and all Marion Clay Plant Equipment.

No obligation.

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Are Economical, Efficient, and Sure"

We maintain a special organization of competent engineers experienced in drying work, as well as a Research Laboratory for conducting investigations to determine correct and economical temperatures, humidities, and velocities of air for the successful drying of your product. We are prepared to furnish complete drying machines, trucks, and trays.

Our recommendations for your particular problem would not obligate you in any way.

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Hyde Park, Boston, Mass.
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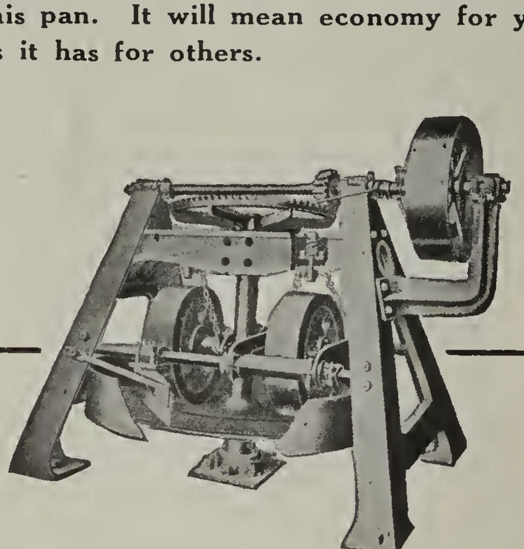
The Eagle Dry Pan is so ruggedly constructed that even the most severe conditions fail to interrupt its successful operation. It meets every dry pan requirement.

Ask for full information today regarding this pan. It will mean economy for you as it has for others.



EAGLE IRON WORKS
DES MOINES, IOWA

McIntosh, who for the last ten or twelve years has been manager and chief superintendent of the Carlinville plant, suffered a breakdown in health and for the past year has been practically unable to devote any time to the plant, and was therefore compelled to retire. The plant will be known as the Carlinville Tile Co.

DEE DISSOLVES NEWPORT PLANT

The William E. Dee Co. of Newport, Ind., recently filed a final certificate of dissolution with the secretary of state.

URGE BRICK ROADS FOR BRAZIL

The Central Labor Union of Brazil, Ind., has adopted a resolution urging the state highway commission to specify paving brick for the construction of the segments of the National road in that vicinity which will be built this year. The resolution says that Brazil is in the heart of the clay industry and brick roads rather than concrete should be built here.

ASK REDUCTION OF INDIANA RATES

O. P. Gothlin, head of the rate bureau of the Indiana Public Service Commission, has recently filed a complaint with the Interstate Commerce Commission against the Chicago, Indianapolis & Louisville R. R. and the C., C., C. & St. L. stating that freight rates between Putnamville, New Castle and Pendleton on brick are excessive. The present rate on brick from Putnamville to Pendleton is $1.96 a ton, and from Putnamville to New Castle, $2.10.

INDIANA COMPANIES ARE BUSY

The Brazil, Ind., and Clay County, Ind., brick factories seem to be landing big brick contracts right and left these days and orders which are pouring into the company's offices promise a busy year at the plant west of the city. Recently the Brazil Clay Co. was awarded the contract for furnishing the brick for the new Putnam County Hospital at Greencastle. The same company was awarded the contract for furnishing the brick for the new Vermillion County Hospital to be erected at Clinton.

WILL WAGE "BUILD WITH BRICK" CAMPAIGN

A "Build with Brick" publicity campaign is to be waged this spring at Evansville, Ind., and a mass meeting is being planned at which the public will be enlightened on the uses of brick. The affair is being arranged by the brick manufacturers of that city, assisted by the Bricklayers' Union, of which Fred Zahn is president. An organization has been perfected with the following officers: President, Fred Zahn; secretary, John Andres, of the Standard Brick Manufacturing Co.; treasurer, Charles Scarborough, contractor. Mr. Scarborough also is at the head of the advertising committee and W. B. Lensing, building supply dealer also is on this committee.

INDIANAPOLIS HOME SHOW MAY 8

The program for lectures and motion pictures of various subjects relating to home construction and furnishing is to be a feature at the Home Complete Exposition, May 8 to 13, at the Indiana State fairground, was announced by J. Frank Cantwell, chairman of the exposition committee of the Indianapolis Real Estate Board.

Monday, May 8, in the evening, the program will consist of special talks and demonstrations on "Own Your Home."

On Tuesday a lecture and motion picture will be given on the oldest building material known—brick. Interesting motion pictures showing ancient Egyptian edifices, built from brick, and various structures erected from that time on thru the centuries to the present day, will be shown on the screen.

Lumber will occupy the program for Wednesday, May 10.

The afternoon of Thursday, May 11, will have as its program a showing and explanation of stone, stucco and tile as building materials. The program on Saturday will include a talk on building loans and financing.

REFUSES ORDERS TO JUNE 1

Indicative of the tendency toward increased business word has come from the Wm. E. Dee Co. that no more orders for building brick will be taken until June 1. The company's plants have a capacity of one million building brick per month and according to J. H. Zinn, sales manager at Indianapolis, three million brick have been sold in Indianapolis alone. Officials of the company are delighted that business is showing an increase. The abandonment of the coal branch of the C. & E. I. company has in fact been a benefit to the clay plants around Mecca. Officials of these plants say they are getting better service from the C. I. & W., which operates a short piece of track from its main line down to Mecca, than they did from their old owners.

BUYS DEWITT CITY BRICK COMPANY

Announcement has been made of the purchase of the DeWitt City (Ia.) Tile & Brick Co. by Alvin E. Wahale of Davenport, who will have as a partner Ralph Hartwell, also of Davenport. The new owners are planning to start opertions at once.

AWARD BRICK PAVING CONTRACT

The contract for paving five blocks of the main streets of Ellinwood, Kas., has been awarded by the city council to an Ottawa, Kan. firm. Brick will be used. The successful bid was $2.86 a yard.

NEW KENTUCKY CLAY COMPANY

The Paducah (Ky.) Clay Co., capital $50,000, has been chartered by E. B. Ferguson, Luther F. Carson and Luke T. Burradel. A number of fine clay deposits are found in that vicinity, and several clay companies have been chartered in the vicinity within the past three to five years.

INCREASING CAPACITY TO 10,000,000

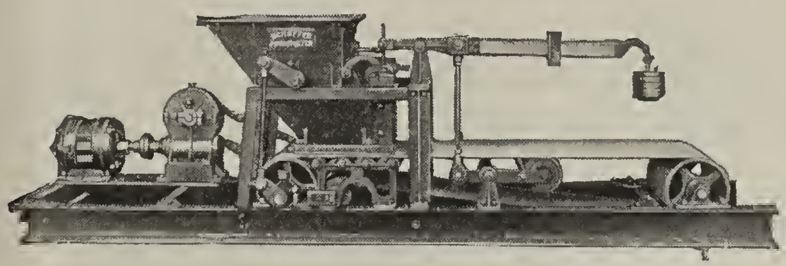
Improvements which are in process of completion at the plant of the Lexington (Ky.) Brick Co. will, it is hoped, enable the company to manufacture approximately 10,000,000 brick this year. Ordinarily the plant produces from six to eight million brick. Manager James Daily states that according to all reports there will be an unusual amount of building in Lexington this year.

PLANNING TO BUILD NEW PLANT

The Kentucky Refractories Corporation, Covington, Ky., has acquired a tract of land totaling about 17 acres at Russell, Ky., and plans for the erection of a new plant for the manufacture of fire brick and other refractory products. It is expected to break ground at an early date. The plant will consist of a number of buildings and is estimated to cost about $375,000, including machinery. It will be equipped to give employment to about 175 men. A. J. Ivey is secretary and treasurer.

REMODELING KENTUCKY PLANT

More than 25 men are being employed at the plant of the Ashland (Ky.) Fire Brick Co. in making alterations, improvements and additions. These improvements are being made to increase the capacity of the company, lower production costs, and improve the quality of the ware. The improvements when completed will give the company an additional floor space of 30 per cent., and will enable capacity to be increased 20 per cent. J. O. Trautwein, a well known engineer in the ceramic industry, is in charge of the work.



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Where the demand is heaviest, where quality has first consideration, where conditions are adverse, where economy must be rigidly enforced, where speed is necessary—that is where the POIDOMETER is most successful.

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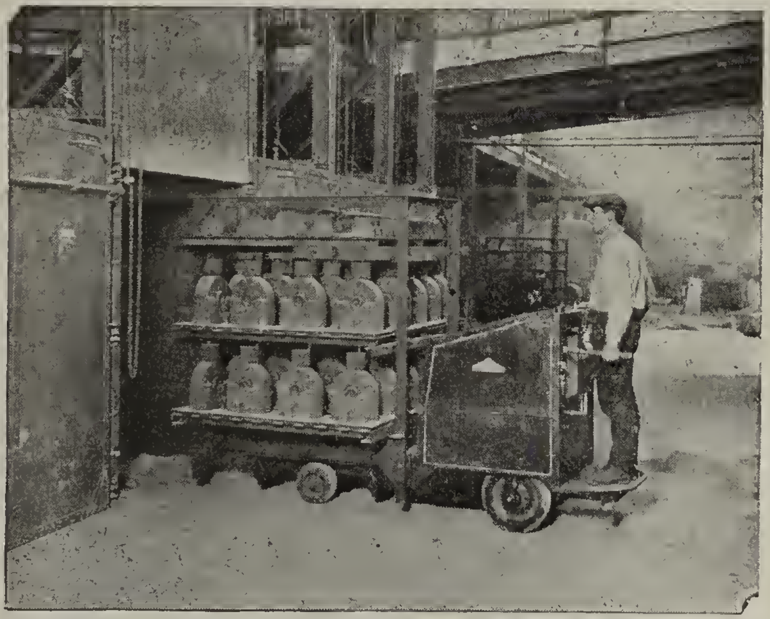
This Machine Works
Until Whistle Blows



Plants using the new gasoline Clark Truklift find that it keeps its "pep" 24 hours a day if desired.

CLARK TRUCTRACTOR CO.
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ATLANTA, GA. BALTIMORE, MD. BOSTON DETROIT

PITTSBURGH, PA. PHILADELPHIA MONTREAL MINNEAPOLIS NEW YORK CITY

SAN FRANCISCO ST. LOUIS, MO. TORONTO WINNIPEG, MAN.

MORSE Silent Chain Drives are 98.6% efficient for small or large drives. No worry about belt trouble, slippage of power and loss of production where Morse Chain Drives are installed.

Write us if you have a transmission problem. We give engineering service without any obligation.

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Largest Manufacturers of Silent Chains in the World

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WINS FREIGHT RATE REDUCTION

A reduction of nine cents in the freight rate on clay from Carter City to the plant in Jefferson was granted the Louisville (Ky.) Fire Brick Co. by the state railroad commission on April 12. The company had also asked for $5,000 reparation from the Chesapeake & Ohio R. R., but this request was refused. The railroad raised the rate to $1.96, and then entered into a joint rate with the Louisville & Nashville R. R. which obviated switching charges of $3 a car, and reduced the rate to $1.75. The reduction was contended to be inadequate by the Louisville Fire Brick Co., who maintained that on the basis of the advance made in the rates, the new rate should have figured out $1.66 instead of $1.75. This contention was upheld by the commission.

NO LOWER PRICES IN SIGHT IN LOUISVILLE

Demand for brick is generally heavy in all sections, according to Louisville, Ky., jobbers, who claim that they are about two weeks behind in deliveries of some brick, and that manufacturers are generally busy, and having trouble in some instances in making prompt shipment. Under such conditions there is no prospect of lower brick prices.

Some articles appearing in the press relative to prospects for lower brick prices have been a little demoralizing, and have caused trouble, as in making sales the brick man has had this thrown up to him time and again by the buyer. The salesman has some trouble in getting the idea out of the head of the buyer, as general consumers figure that lower prices are due on everything.

KENTUCKY NOT WORRIED OVER COAL STRIKE

The coal strike is not affecting the brick manufacturers of Louisville, Ky., as they have good supplies of coal on hand, and not ten per cent. of the production of the state has been affected by strike. With the exception of a few mines in southeastern Kentucky, there have been no strikes in the state, western Kentucky deciding to work. Northern and eastern Kentucky is non-union, and only a few non-union mines in the southeastern corner of the state are striking. Coal mine operators are having trouble in securing orders to operate their mines, as demand for fuel is generally poor. Consumers expect the strike to be broken, and to see lower miners' wages and cheaper fuel. Some statisticians claim that it will be two or three months before the strike can have any serious effect as a result of small consumption, large stocks in hand, and heavy production in some non-union fields.

MAINE BRICK SELLS FOR $18

Brick manufacturers of Lewiston and Auburn, Me., have cut the price of water struck brick to $18. This reduction is from $35, which later was cut to $25 and $27 per thousand. Companies in these cities report orders ahead of any for several years.

HYDRAULIC PRESS MOVES OFFICES

The Hydraulic-Press Brick Co. has announced that its Baltimore offices have been removed to 801-2 Munsey Building. In its new quarters the company has a fine display of brick work in various panels, which makes a very attractive sales room. B. W. Figgins is the Baltimore representative of the company.

WILL RUN CAPACITY ALL YEAR

The biggest business which the plant has handled in several years is now being done by the Hancock Shale Brick Co. of Hagerstown, Md. William P. Bridges, Jr., president, says the outlook is excellent and he expects to have the plant running to capacity all year. The first three months of 1922 have been productive of more business than all of 1921.

BURNED CLAY AGAIN TO THE RESCUE

Duplicating on a smaller scale the big fire which occurred in Chicago recently, was one which raged in Pocomoke City, Md., on April 17. The fire raged for many hours and laid in ruins practically the entire business district of the Maryland town, causing damage estimated at $2,000,000. The fire was similar to the Chicago conflagration in that it raged with unabated fury until halted by a 15-story building constructed of burned clay. In the case of the Pocomoke fire, the Peninsula Produce Exchange, a three-story brick building, prevented the spread of the fire and made the work of the fire department effective.

MEDFORD PLANT WILL START SOON

The New England Brick Co. of Medford, Mass., is planning to resume operations again at its large yards in that city which have been unoperated for a number of years. Workmen are now engaged in putting the yards into condition and water in the clay pits will be pumped out by power pumps. This will take at least a week to complete.

DISTRIBUTE ATTRACTIVE SOUVENIRS

The A. P. Green Fire Brick Co., of Mexico, Mo., has recently made an attractive souvenir which was distributed at a meeting of the Rotary Club in Muskogee, Okla. The souvenir is a square piece of fire clay with the name of the company stamped on the top and a raised design of the wheel, emblematic of Rotary, burned on the piece.

TESTING MISSOURI CLAY DEPOSITS

An expert engineer and a force of workmen have begun to make tests of clay deposits on the Davis land, near the Rich Hill (Mo.) Tile Co. plant and will thoroly look into the possibilities that underly this land. The tests are made at the instance of the W. S. Dickey Clay Co. of Kansas City. If the tests prove satisfactory the company plans to reopen the plant here and manufacture tile and brick products on a larger scale than ever before.

FINDS BUSINESS VERY GOOD

Building business in the McCook, Neb., district is booming this year, brick building seeming to predominate, according to H. H. Smith, manager of the McCook Brick Co. Many inquiries for brick homes are being made and the company expects a banner year. Mr. Smith, who was formerly connected with the Smith Brick Co., at Omaha, Neb., has signed a contract to manage the McCook plant for the next five years.

FIRE DAMAGES CARBORUNDUM PLANT

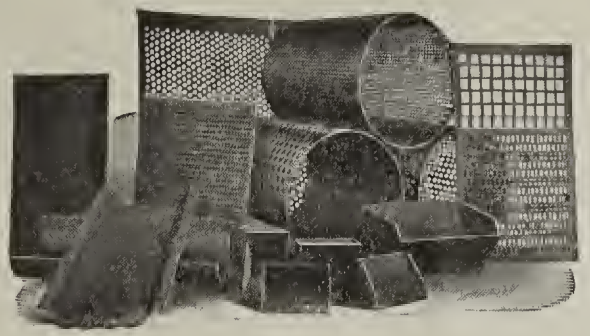
Fire, which broke out in the Keasbey plant of the Carborundum Co. at Perth Amboy, N. J., March 20, threatened the destruction of the entire plant, but fire companies from four municipalities stemmed the advance of the flames. Several buildings were burned and the damage was estimated at $50,000, it is reported. This plant was formerly the Didier-March Co. plant.

The plant of the General Ceramics Co. which is separated from the Carborundum plant by a railroad track, was also menaced for a time, but the wind shifted and the flames did not reach the buildings.

NEW YORK TILE COMPANY FORMED

The Fourlock Tile Corporation, Tuckahoe, N. Y., has been organized under state laws with capital of $10,000, to manufacture tile and other burned clay products. The incorporators are C. F. Bailey and J. Goldberg. The company is represented by A. S. Mortimer, 111 Broadway, New York.

HENDRICK SCREENS
FOR ALL PURPOSES



ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
LIGHT STRUCTURAL WORK
LIGHT AND HEAVY STEEL
PLATE CONSTRUCTION

Ask for your copy of the Perforated Metal Handbook

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DIESEL ENGINES
FOR CLAY PLANTS

Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal types furnished.

THE HADFIELD-PENFIELD STEEL COMPANY
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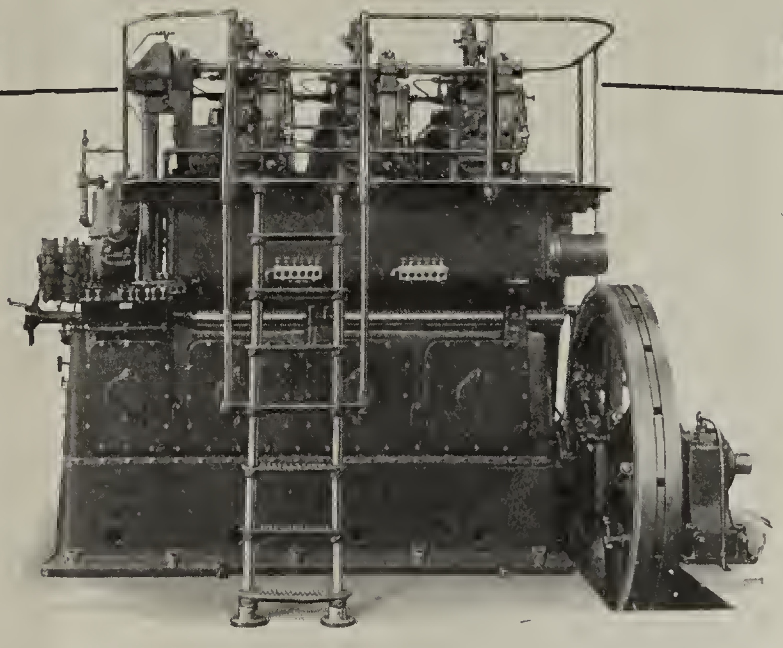
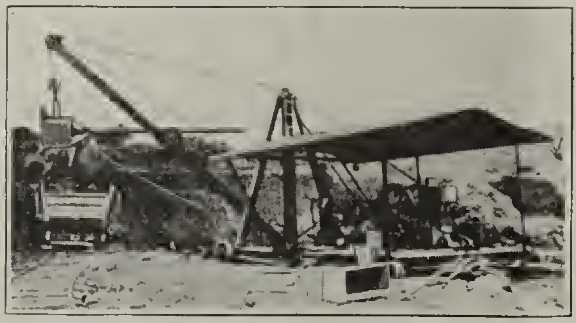
Formerly the American Clay Machy. Co.





This Machine Will Better Your Conditions!

The One Man Excavator is highly adaptable for the average plant of 25,000 to 100,000 capacity. It will do the work of 10 or a dozen hand laborers for less than the daily wage of three of them. It will work in any weather.

Ask for full information concerning this machine. It can be furnished with gasoline or electric power, with track or caterpillar mounting. You can afford the purchase price.

Write today

**The
Bay City Dredge Works
Bay City, Mich.**

MOLDS

It takes good molds to make good brick. We understand your requirements, Mr. Clay Products Manufacturer. Our molds are made in every type, size, with letters, panels, etc. Manufactured of air-dried cherry or maple.

Ask for detailed information. No obligation.

The
Wellington Machine Co.
WELLINGTON, OHIO

GOTHAM BUYING ALL AVAILABLE BRICK

Orders being placed for building materials in the New York market show no let-up, showing that the decline in speculative housing construction enterprises has been discounted some time ago. In the light of common brick demand, for example, 24 barge loads arrived in the week ended April 21, and 24 barge loads were sold, although the wholesale price stiffened from a range of $16.00 to $16.50 a thousand to a flat wholesale price of $16.50 a thousand.

EVANS BUILDERS TO MAKE FACE BRICK

The Evans Builders Co., Cincinnati, O., manufacturers and jobbers in sewer pipe and clay building material products, are now manufacturing a line of face brick thru the Columbia City Co., a subsidiary organization.

TO BUILD 1,000 HOMES IN CINCINNATI

One of Cincinnati's wealthiest women announced recently that she proposes to build on a large plain southeast of Madisonville, a model town to be known as Mariemont. There are 360 acres in the tract. Her plan is to build 1,000 residences to range in cost from $3,000 to $7,000, the first of which will be completed before the end of this year. There will also be a special section of 50 cottages with a hospital for her pensioners. The 1,000 homes will cost about $4,000,000, it is estimated.

NEW COMPANIES AT UHRICHSVILLE

Incorporation papers for the Stillwater Clay Products Co., capitalized at $150,000, which will manufacture sewer pipe and flue lining, were drafted at Uhrichsville, Ohio, recently. The plant will be located on the holdings of the Walnut Coal Co. between that city and Newport. Incorporators are H. B. Galbraith, H. D. Westhafer, J. A. Pearch, D. K. Laporte, H. B. Cameron and J. A. Barkley.

The second Uhrichsville clay plant to be incorporated within a week is the Triangle Clay Co. Within the first part of April four new clay companies have been organized there.

DENIES REPORT OF COMPANY'S SALE

F. F. Hoffman, secretary of Columbus (Ohio) Brick & Terra Cotta Co., whose works are at Union Furnace, Ohio, has recently written to Brick and Clay Record stating that a rumor to the effect that his company had been sold to the Central Refractories Co. of Columbus was without foundation. Mr. Hoffman's letter follows:

"We understand that at the last convention of the American Face Brick Association it was announced on the floor of the convention that this company had been sold to the Central Refractories Co. of this city, and we wish you would please made a denial of that report."

MARCH BUSINESS BREAKS RECORD

In a circular recently sent to its dealers the Alliance (Ohio) Brick Co. carries a note of optimism which is pleasant to hear. The company states that brick shipments in March, 1922, exceeded the amount in value of shipments in any months since the plant was opened in May 1910. In the 12 years the company's average March shipments have been less than the average of any one of the seven months from April to October, inclusive.

Orders received during March were far in excess of shipments. The company says, "This remarkable volume of orders and shipments so early in the year certainly indicates a rapidly growing building movement. It is a 'straw' showing the way the wind is blowing. Our representatives in almost every section of the country are giving us the most optimistic reports."

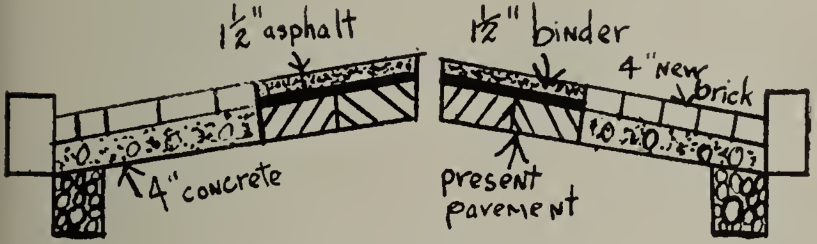
RESURFACING OLD BRICK PAVEMENTS

In Columbus, Ohio, some of the brick and stone block pavements, which have been in place from 20 to 30 years, are being successfully resurfaced with asphalt. These pavements were laid on gravel, broken stone or creosoted plank foundations and the brick are small in size with sand or tar filled joints.

A Road in Columbus, Ohio, Resurfaced with Asphalt.

In resurfacing the pavements were thoroly gone over and depressions with a depth of over three inches were filled with concrete while the slighter depressions were filled with binder. After this was completed the entire street surface was cleaned by flushing with the fire hose and sweeping.

To avoid shallow gutters which would be a result of resurfacing from curb to curb an interesting method was resorted to. After taking up a three or four foot strip of the old brick near each curb a new gutter of brick was constructed on a concrete foundation. Another method used to some extent was to remove the strip of brick entirely and replace it with concrete to such a grade that asphalt could be laid from curb to curb and still maintain a proper gutter depth. A closed binder of 1½ inch in thickness was laid directly on the old pavement and on this a 1½ inch standard sheet asphalt surface was placed.



Cross-Section of Resurfaced Road.

NEW PLANT TO START MAY 20

William Arehart, formerly superintendent of a large plant of the Hydraulic-Press Brick Co. at Roseville, Ohio, is the new superintendent of the plant of the Stonecreek Brick Co., which is half completed.

The plant will be completed and in operation by Decoration day, A. C. Marsh, the president has stated. From 50 to 75 men will be employed at the start of operations.

Officers of the company are: President and manager, A. C. Marsh, this city; assistant manager, J. E. Smith, Stonecreek; vice-president, F. J. Huff, Dover; secretary and treasurer, Wallace P. Marsh, Stonecreek; directors—A. C. Marsh, H. E. Marsh, J. H. Marsh, W. P. Marsh, John J. Marsh, J. E. Smith, F. J. Huff, W. C. Morrison and Fred A. Strine.

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FIRE CLAYS

have all the necessary requirements of a successful refractory.

They are practically infusible—they have an exceedingly hot melting point—they resist all mechanical corrosion—they withstand sudden changes without cracking — they have low heat conductivity.

Let us quote you prices
Write today

The ANNESS & POTTER
FIRE CLAY COMPANY
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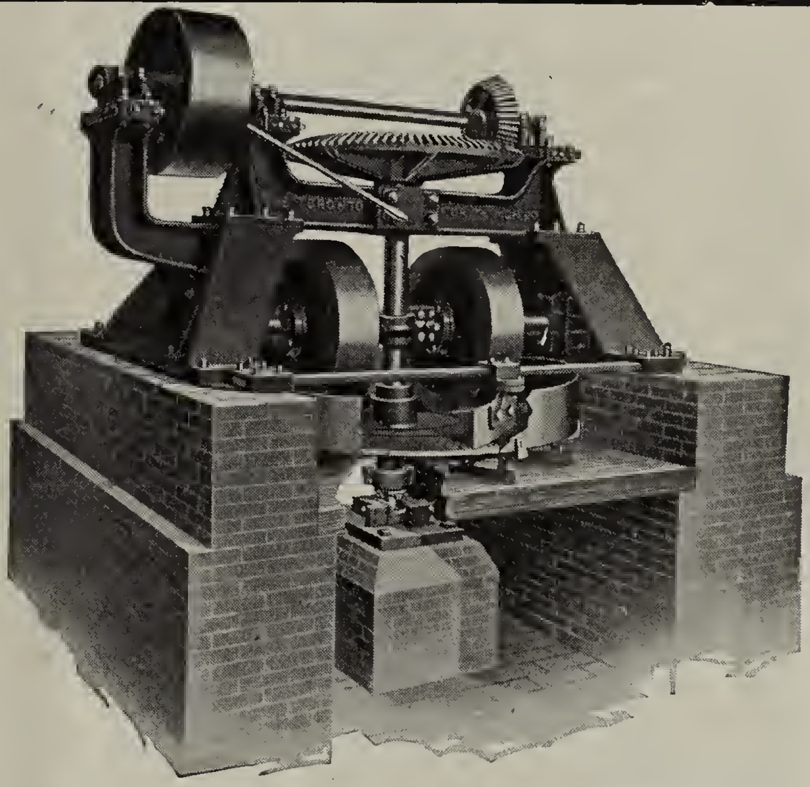


10 ft. Standard or Type "B" Dry Pan

RUGGED CONSTRUCTION

and scientific design are characteristic with the standard type "B" dry pan.

Every engineering principle for the promotion of economy and serviceability has been incorporated in this machine.

Ask us about it, and other Toronto equipment

The Toronto Foundry & Machine Company
Toronto, Ohio

Let Us Tell You What We Know

about the installation of hand poked or mechanical producers, rotary dryers or calciners.

Our thirty years' experience in this business will prove valuable to you, when you decide upon an installation.

We manufacture a complete line of stacks, tanks and other steel plate work.

Ask for details

DUFF PATENTS COMPANY
INC.
Frick Building Pittsburgh, Pa.

REG. U.S. PAT. OFF. TRADE JENKINS MARK Jenkins Bros

Genuine Jenkins

To their correct design and to the supreme care used in making them, may be attributed the unvarying dependability of Jenkins Valves.

For more than half a century, Jenkins Valves have set the standard by which other valves are judged.

Valves of brass, iron, and steel in types and sizes for power plants, plumbing, heating, and industrial service.

So you may avoid imitation, genuine Jenkins Valves carry the Jenkins "Diamond" and signature cast on the body.

Supply houses everywhere.

Fig. 106 Jenkins Standard Brass Globe Valve.

JENKINS BROS.
New York Montreal Chicago Philadelphia Boston London

Jenkins Valves SINCE 1864

GRANTED 40% RATE FREIGHT REDUCTION

Cincinnati brick men hailed with joy an announcement by Fred Henshaw, manager of the traffic department of the Chamber of Commerce April 24, that the Interstate Commerce Commission had ordered a reduction of 40 per cent. on brick, effective July 12.

After Henshaw received notice of the reduction he held a conference with Arthur Taylor, president of the Refractories Manufacturers Association, and this was followed by an announcement that the decision meant a saving of hundreds of thousands of dollars in Cincinnati annually. This reduction opens the way to other possible reductions on building material freight and is one of the most important in years, according to Mr. Henshaw.

FACE BRICK OUTLOOK IS GOOD

Optimism prevails everywhere among brick manufacturers of the Canton, Ohio, district and prospects for an active spring and summer season are brighter than in many years, Paul B. Belden, secretary and general manager of the Belden Brick Co. said recently.

"The brick industry at this time is looking very much brighter" said Mr. Belden. "One element which is retarding business to a certain extent is the uncertainty of prices. Brick prices have been fluctuating for some weeks and until they are stabilized the industry will be in more or less commotion, manufacturers say.

"Sales of face brick are on the increase and building prospects locally and elsewhere are such that manufacturers are counting strongly on a large volume of business later in the season. Building in prospect is far in excess of a year ago and there seems to be a much better feeling among the building supply men. Buildings in prospect are largely of the type that will require much brick. Reduced freight rates already have reflected increased activity in brick manufacturing plants in the Canton district.

CLAY COMPANY INCREASES CAPITAL

The Columbian Coal & Clay Co, Weightman Building, Philadelphia, Pa., a Delaware corporation, has filed notice of increase in capital from $300,000 to $450,000 for proposed expansion.

REFRACTORIES COMPANY FORMED

The Welsh Refractories Co., Inc., Lancaster, Pa., has been organized under Delaware laws with capital of $350,000, to manufacture fire brick and other refractory products. The incorporators are Fred Pontz, Lancaster; H. M. Walters, Reading, Pa.; and George J. Root, Reamstown, Pa. The company is represented by the Delaware Registration Trust Co., 900 Market Street, Wilmington, Del.

HOOD PLANT IS BUSY

C. W. McDowell, manager of B. Mifflin Hood Brick Co.'s Memphis office at 324 Madison Ave. Bldg., reports April trade good. The company is supplying a number of good sized projects with brick.

HERBERT-FISCHER BUILDS NEW KILN

Memphis, Tenn., brick manufacturing plants are active and local wholesalers report good business in city and surrounding section. The Herbert-Fischer Brick Co. has added another unit to its plant in south Memphis, and the completion of this new kiln will bring the total capacity to about 160,000 brick per day.

NEW COMPANY IN DALLAS

The Acme Retail Brick Co. has been incorporated at Dallas, Texas, with a capital stock of $5,000. The incorporators are L G. Waskum, F. H. Shaw and R. H. Waskum.

WANT CERAMIC COURSE AT TORONTO U.

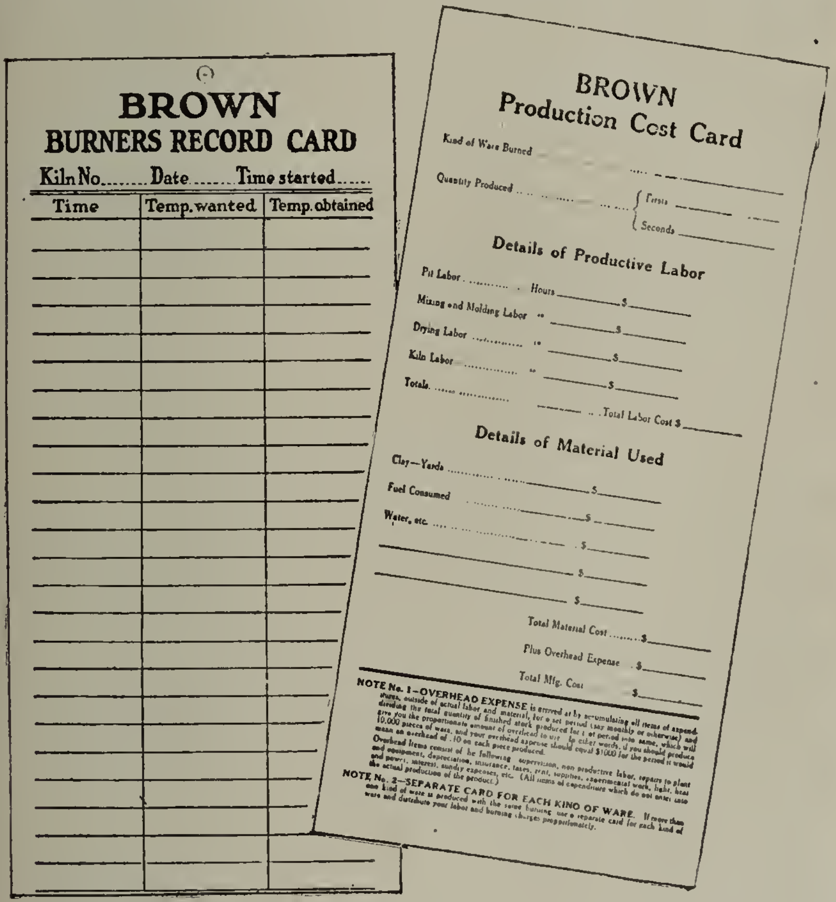
The Technical Education Committee of the Canadian National Clay Products Association has been very busy. Since the convention there have been several conferences with officials of the Canadian Manufacturers' Association with the idea of enlisting their support in having a ceramic course established at Toronto University. They also met with Dean Mitchell of the Department of Science, Toronto University, and the next step will be a gathering of clay products manufacturers in Toronto on May 12 at 10:30 a. m. to deal with several matters in connection with the campaign. At this meeting speeches will be made by General Mitchell, Wm. Burgess of the Don Valley Brick Works and H. F. Dingeldine of the National Fireproofing Co.

Machinery and Equipment

Devices and Methods, New and Old
Concerning Which Information of Interest
to the Clay Manufacturer is Published

DISTRIBUTES BURNER CARD FREE

The Brown Instrument Co. has developed a very interesting burner card which it is sending to brick plants free of charge. In going around to various plants in the country the need for some simple card of this kind was evidenced, and this service is being appreciated by clay manufacturers. As shown in the illustration, it is a burners' record card with a very comprehensive cost sheet on the back. The Brown Co. will be glad to send this card to those desiring it.



BROWN
BURNERS RECORD CARD

Kiln No........Date.......Time started......

Time	Temp. wanted	Temp. obtained

BROWN
Production Cost Card

Kind of Ware Burned ....
Quantity Produced .... Firsts ____ Seconds ____

Details of Productive Labor

Pit Labor .... Hours ____ $ ____
Mixing and Molding Labor " ____ $ ____
Drying Labor .... " ____ $ ____
Kiln Labor .... " ____ $ ____
Totals .... ____ .. Total Labor Cost $ ____

Details of Material Used

Clay—Yards .... $ ____
Fuel Consumed .... $ ____
Water, etc. .... $ ____
____ $ ____
____ $ ____
Total Material Cost .... $ ____
Plus Overhead Expense . $ ____
Total Mfg. Cost $ ____

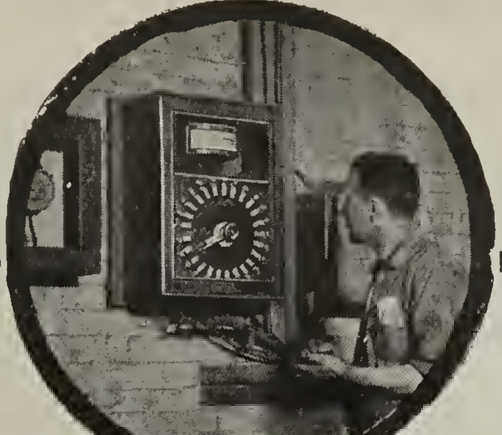
NOTE No. 1—OVERHEAD EXPENSE is arrived at by accumulating all items of expenditures, outside of actual labor and material, for a set period (say monthly or otherwise) and dividing the total quantity of finished stock produced for that period into same, which will give you the proportionate amount of overhead to use. In other words, if you should produce 10,000 pieces of ware, and your overhead expense should equal $1000 for the period it would mean an overhead of .10 on each piece produced. Overhead items consist of the following: supervision, non productive labor, repairs to plant and equipment, depreciation, insurance, taxes, rent, supplies, experimental work, light, heat and power, interest, sundry expenses, etc. (All items of expenditure which do not enter into the actual production of the product.)

NOTE No. 2—SEPARATE CARD FOR EACH KIND OF WARE. If more than one kind of ware is produced with the same burning use a separate card for each kind of ware and distribute your labor and burning charges proportionately.

A Very Handy Burner's Record and Production Cost Card Distributed by Brown Pyrometer Co.

NEW ZEALAND HAS FINE CLAYS

The New Zealand Brick, Tile & Pottery Co., Limited, of Auckland, N. Z., has recently sent us some very interesting information regarding clays and clay deposits in New Zealand.



SAVED
56 to 90 hours per kiln,
10 to 12 tons of coal per kiln,
15 to 20% more firsts—

Let us prove just such savings as this to you at our own expense

The Brown Instrument Company
4503 Wayne Avenue Philadelphia, Pa.

Brown Pyrometers
Most used in the world

Proven Ability

SERVICE
SPEED
ECONOMY

In every installation, the Sunbury Automatic Car Unloader has proved its ability to cope with all conditions. It unloads from 30 to 50 tons per hour and requires only one man to operate. Costs only a fractional amount for upkeep and maintenance.

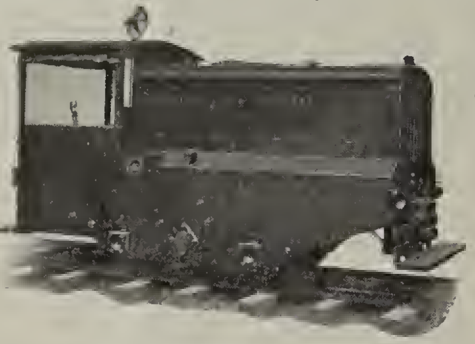
Tell us your requirements and we will let you know what the Sunbury will do for you adapted to your own conditions.

It won't obligate to write us for a catalog.

DO IT NOW.

The Sunbury Manufacturing Co.
Sunbury, Ohio

"Minster" Industrial Locomotives
For Service and Lasting Economy



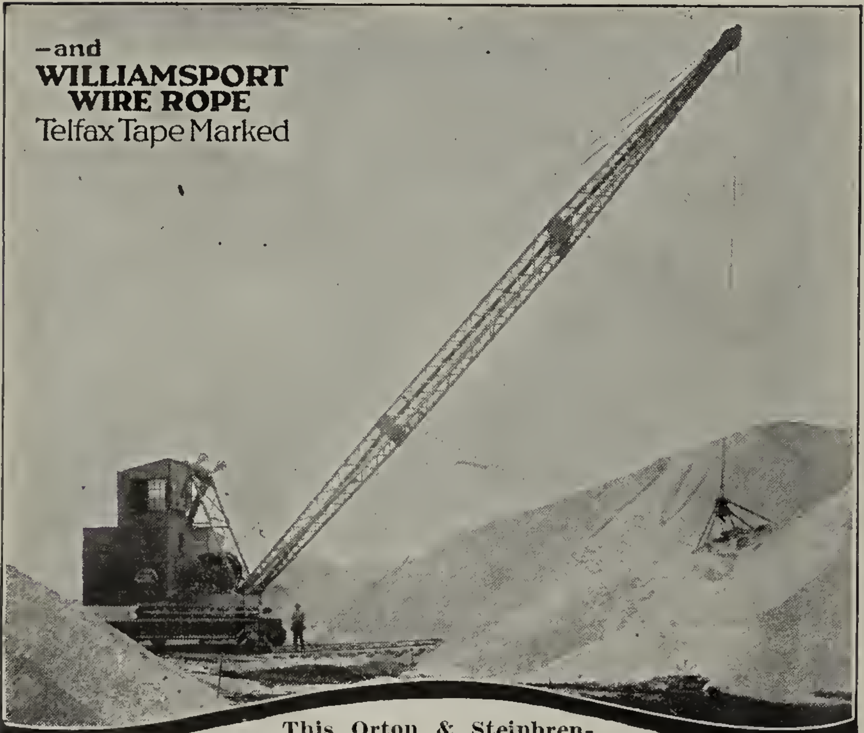
New Model "F" in 6, 7 and 8 ton sizes

No other locomotive on the market surpasses the "Minster" for ability to give satisfying service over periods measured by years.

The "Minster" is a lasting guarantee of economy and service. : Ask about it.

THE INDUSTRIAL EQUIPMENT CO.
510-516 Ohio St. Minster, Ohio

Eastern & Export Department
THE HERBERT CRAPSTER CO., Inc.
1 Madison Avenue, NEW YORK CITY



This Orton & Steinbrenner crane is equipped with

WILLIAMSPORT WIRE ROPE

There are many Orton & Steinbrenner cranes similarly equipped. When you get a hoist, crane or shovel "Williamsport" equipped, you may **know** the manufacturer has **gone the limit** to give you super-quality **throughout**. He could give you no **higher** quality at any price—but he could **easily** give you **lower quality** and **save quite a difference in price for himself.**

Any manufacturer who is willing to supply Williamsport Wire Rope on your equipment is worthy of your highest confidence.

WILLIAMSPORT WIRE ROPE COMPANY
Main Office and Works
Williamsport, Penna.
General Sales Office
Peoples Gas Bldg., Chicago
"ACCEPTED AS THE BEST"

Joseph Keal, ceramic engineer to the Canadian Mines Department, while on a visit in Wellington, said he had been very much impressed with the excellence of the raw material presented by the clays of New Zealand. Soft clays and hard clays were available in large quantities and great variety. Stoneware clays, which he praised very highly, were present in abundance, and clays for the manufacture of wall tiles, floor tiles, architectural terra cotta or high grade brick were also present in quantity. In the Rotorua district, are large deposits of white clays suitable for the manufacture of porcelain when blended with other materials that are found in the dominion. Samples of New Zealand clay which Mr. Keal exhibited had a wide range of color and texture, they were white, yellow, red, brown, blue and gray. Mr. Keal was very much surprised to find that the clay industry was rather neglected in New Zealand. He told New Zealanders, "I do not think you know in Australia and New Zealand what a good job of brickwork means. You have never seen it, if your experience has been confined to your own country."

INDIANA TO BUILD BRICK ROAD

The contract for the construction of the first brick state road has been awarded by the Indiana Highway Commission, involving an expenditure of more than $100,000 above the low bid for concrete pavement of the road. All other state roads for which contracts have been awarded by the commission have been of concrete construction. The section to be constructed of brick is 6.897 miles of the National Road between Putnamville and a point east of Mt. Meridian. The contract went to the Carpenter Construction Co. of Terre Haute, Ind., on a bid of $219,916.78. The highway is to be made of bituminous filled brick with a five-inch concrete base. The low bid for concrete construction of the same section was $108,000.

Action of the commission in awarding the contract is in line with the announcement made some time ago that some brick highways would be built in Indiana this year. The brick companies for some time have been asking the commission for a chance to construct a part of the state highway system. They have complained of the specifications of the highway department requiring a concrete base for brick highways. They say if permitted to build brick roads without this base, they can compete with concrete companies in price.

⁂

THE BUILDING SITUATION

(*Continued from page* 703)

operations to insure peak activities thruout the spring and summer. At Hagerstown, the wages of carpenters have been reduced from 80 to 70 cents an hour, with nine-hour day instead of eight-hour, as heretofore.

Common brick at Baltimore is $20 a thousand, on the job; hollow tile is from 14 to 39 cents a block, wholesale, in carload lots; face brick is $45.

Pittsburgh Housing Corporation Progresses

With a total of 178 houses erected already this year and plans in operation for the erection of 1,000 in all, the Commerce Housing Corporation operating under the auspices of the Pittsburgh Chamber of Commerce has established a nation-wide record for home building, according to its annual report approved recently. The houses erected include 141 built on contracts totaling $600,000 and 37 built for individuals at cost. Another contract for 53 houses was let a short time ago.

Several of the large insurance companies, it is said, including the Equitable, Metropolitan and the Prudential, agreed to provide first mortgage money, to the extent of several millions of dollars for the purpose. Valuable cooperation has been received from the Pittsburgh Clearing House

Association thru which a revolving fund of $600,000 has been set aside by Pittsburgh banks for the financing of construction certificates for the housing corporation.

Cleveland Settles Building Strike

The building strike, which has tied up construction in the Cleveland, Ohio, district for the past two months, has been declared off. Work has been resumed on all projects, and it may be truthfully said that the building situation is better than it has been for several years. Housing projects are showing a decided tendency to eclipse previous records.

The settlement of the prolonged strike came about thru an offer by the contractors to continue paying last year's scale in all trades, until such a time as other arrangements can be agreed upon. It was also announced that every effort would be made to effect a final settlement in which the future peace of the industry would be assured.

Building permits during April will undoubtedly show a great increase over March both in number and size. Banks and loan companies are easing up considerably, and money for building is easier to secure than it has been for many months.

Cincinnati Advancing Rapidly

An estimate made by officials in the building inspection department of Cincinnati, Ohio, is that the amount of new building construction in the season just starting can be conservatively placed at $25,000,000. Some of the large projects, which it is understood will be started soon, are a combined theatre and apartment building which will exceed $1,000,000, and two office buildings, each of which is to cost not less than $1,500,000. Building inspectors say that the only fear they have is that there will not be enough labor to handle all the construction that is in prospect. Complaints already have been received that some contractors are refusing "little jobs" unless they can see a large profit in them, because there is so much "big work" about to be let.

Many Face Brick Being Sold in Chicago

Labor troubles in Chicago are being momentarily supplanted in the interest of the public and the building industry by the magnitude of the building boom which has manifested itself in the city and suburbs. In the bricklayers and affiliated trades, contractors are begging for men and find the supply entirely insufficient to meet the demand.

An enormous face brick business is being done in Chicago at present. Dealers report orders equal to and in many cases in excess of all previous records. One of the largest face brick dealers in the city reports daily sales ranging from a low point of 150,000 daily to as high as 850,000 face brick sold in one day. F. W. Armstrong, general manager of the Citizens Committee to Enforce the Landis Award, predicted the building permits for 1922 would pass the $150,000,000 mark, or more than double those of 1921, under the influence of favorable conditions induced by the Landis award.

South Is Active

Brick and sewer pipe trade in the Memphis territory shows considerable activity in April, and while the really large construction jobs seem slow to start, the class of medium work such as warehouses, residences and apartment stores is of sufficient volume to indicate that business will be quite active there during the summer and autumn.

March building permits at Memphis aggregated $1,345,440, $875,000 of this amount was for dwellings. Permits were used for 76 brick veneer dwellings to cost $467,000. The total for the first quarter of 1922 is $3,454,250 as compared with $2,123,325 in 1920 for the first quarter and $1,303,473 in the first quarter of 1921.

"HURRICANE" DRYERS

Drying Electrical Insulators

THIS TUNNEL DRYER was the means by which one large plant, manufacturing high tension electric insulators, cut more than a week from their manufacturing schedule. It now takes but 48 hours to completely and uniformly dry this ware. It previously required from ten days to two weeks.

Shrinkage checks are practically nil, as the drying conditions are always under automatic control. Breakage due to handling is eliminated since the ware is not touched from the time it leaves the green finisher until after it has been dried, and ready to be dipped. The insulators are handled on rubber wheeled trucks, being progressed through the dryer by an automatic pushing apparatus, at regulated speed. Even the heaviest pieces are turned out in excellent shape.

It gives complete satisfaction to know that you have dependable equipment that consistently turns out your ware in fine condition, precisely on schedule. Have You?

You can rely on "Hurricane" Dryers. Let us describe to you the possibilities of these machines at your plant.

Send for complete details, NOW.

The Philadelphia Drying Machinery Co.

3351 Stokley St., Philadelphia, Pa.

Looking toward the charging end of a Harropp continuous kiln (insulated with Nonpareil Brick) 323 feet long. Mt. Clemens Pottery Company, Mt. Clemens, Michigan.

No More Cheap Fuel

NEVER again will fuel be cheap and plentiful enough to throw away. That day has gone forever and the fuel wasting kiln must go with it. The average uninsulated kiln loses 25% or more of its total heat—actually throws that much fuel out into the air by conduction and radiation from walls and crowns. Just stand beside one and see.

By substituting a single course of Nonpareil Brick for one course of common brick in the setting, you can save two thirds of that loss—a net economy in fuel alone of 10% to 15%. Worth saving, isn't it? And equally worth while is the temperature control which Nonpareil Brick insulation affords, reducing the risk of uneven burning and the consequent loss in defective ware.

What Nonpareil Brick save pays for them many times over.

In the 72-page book, "Nonpareil Insulating Brick," is a section on kilns with some valuable data on heat losses and how to stop them. Write for a copy and a sample brick—free.

Armstrong Cork & Insulation Company
149 Twenty-fourth Street Pittsburgh, Pa.

Nonpareil Insulating Brick

For Kilns and Boiler Settings

California Has Big Program

The outstanding subject of local interest in brick and clay circles has been the recent strike of the union bricklayers. Under the ruling of the Impartial Wage Board, the wages of the bricklayers were fixed at $9 per day for 1922, which was being paid without discrimination between union and non-union men.

The attempt to foster a revival of industrial strife at this time cannot meet with public tolerance. This is shown by the recent figures compiled by the Los Angeles Pressed Brick Association. From estimates made, it appears that in the offices of the leading architects of the state today are enterprises amounting to an estimated value of over $31,000,000. Of this sum, over six million is to be for apartment houses, and over six million for public schools; while in the building of private homes California is to lead the nation. Nor is this estimate considered complete, as it does not take into consideration the amount of work that will not pass thru the hands of the architect, but will be carried on from plans furnished from building material associations, contractors, face brick and hollow tile associations.

⁂

Offices of the Eastern Clay Products Association have been moved from 514 Pittsburgh Life Building at Pittsburgh, Pa., to 910 Penn Square Building, Philadelphia. All correspondence and other matter should be addressed to the association in Philadelphia, Pa.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912

of "Brick and Clay Record," published Bi-Weekly at Chicago, Ill.....................for April 1, 1922.

State of Illinois,
County of Cook.
SS.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Edwin G. Zorn, who, having been duly sworn according to law, deposes and says that he is the Editor of the "Brick and Clay Record" and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and address of the publisher, editor, managing editor, and business managers are:

Publisher: Industrial Publications, Inc..........Chicago, Ill.
Editor: Edwin G. Zorn........................Chicago, Ill.
Managing Editor: F. L. Steinhoff.............Chicago, Ill.
General Manager: H. H. Rosenberg.........Homewood, Ill.
Business Manager: David B. Gibson........New York, N. Y.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent. or more of the total amount of stock.)

H. H. Rosenberg...........................Homewood, Ill.
David B. Gibson............51 E. 42nd St., New York, N. Y.
Edwin G. Zorn...........7533 S. Sangamon St., Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent., or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state)...........................None.

4. That the two paragraphs next above giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

Edwin G. Zorn.

(Signature of editor, publisher, business manager, or owner.)
Sworn to and subscribed before me this 31st day of March, 1922.

H. J. Hammond.

My commission expires Oct. 14, 1925.

Among Our Advertisers

Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

TAKES OVER ALL POWELL PATENTS ON SHALE PLANERS

The Eagle Iron Works, Des Moines, Iowa, have purchased all of the patents on Shale Planers and rights to manufacture under same for the entire United States owned by Mr. J. M. Powell of Brooklyn, Indiana, including the rights in Mr. Powell's patents heretofore possessed by Arbuckle & Co., of Brooklyn, Indiana, who will discontinue the manufacture of the Powell Shale Planers.

The Eagle Iron Works now possesses all of Mr. Powell's basic patents on Shale Planers as well as patents on improved details, and combining these with their own patents and applications, are planning an aggressive educational and sales campaign for the promotion of the Shale Planer.

Having convinced themselves that the Shale Planer has come to stay and that there is a real demand for it and having produced machines that have proven successful, plans are under way for greatly improving their facilities for the manufacture of Shale Planers. Especial attention will be given the production of smaller machines to meet the demand for a lower priced machine of smaller capacity, as well as machines of larger capacity, than have heretofore been built; in fact, it is their intention to meet the demands for any capacity, large or small, where the conditions are favorable for the use of the Shale Planer.

* * *

COCHRAN JOINS BONNOT ORGANIZATION

A. D. Cochran was with the Harbison-Walker Refractories Co. for 16 years, and since that time has been with the McFeely Brick Co. at Latrobe, Pa. He has now joined the Bonnot Co. organization, and his long experience in clay plant operation will enable him to be of considerable assistance to clay products manufacturers.

* * *

COMMON BRICK OUTLOOK GOOD

The latest report of conditions in the common brick industry, published by the Common Brick Manufacturers' Association, seems to show a marked improvement and a decidedly more optimistic tone. The report says: "It is encouraging to find the smallest number of 'no demand' answers that we have had in many months. Altho 50 plants out of 108 are shut down at present, nearly all of the 50 are closed down on account of weather conditions or for repairs.

"75 manufacturers report the outlook for the current month as good. The entire tone of the reports in March is much more favorable.

"In the Chicago district the deliveries of brick thru the months of February and March were at a rate that promises a season's output closer to normal than has been experienced in the past two years. In other large centers the demand is above normal for this season of the year. What is most encouraging, however, is the fact that in the agricultural states there is a most encouraging revival of building."

The digest states that according to Government reports the current index on common brick is 172, as compared with 100 in 1913. Transportation and labor, two items which have not been reduced materially, are accountable for this high level. Nevertheless, the common brick price is not out of line with other commodities. The composite price of common brick for March is $12.90 per M. Altho the figure has no particular significance, it nevertheless indicates that the trend of the common brick price is still downward.

Pulling Down Labor Costs

In seeking a decisive way to lower labor costs, many contractors are turning to STANDARD GRAVITY CONVEYORS.

They find that the cost of common labor is cut to the minimum and skilled labor is kept busy because they don't have to wait for materials.

This method is decidedly economical as the power costs you nothing and the upkeep is almost negligible.

STANDARD CONVEYORS are so scientifically and sturdily built that tons and tons of weight can travel over them before they show any signs of wear.

Write for booklet B. C. R.

Standard Conveyor Company
North St. Paul, Minn.

New York
227 Fulton St.

Chicago
549 W. Washington St.

Cleveland, O.
225 Elec. Bldg.

Milwaukee
606 Security Bldg.

Representatives in all principal cities

Trade Names Now in Use

on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.
ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.
ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.
ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.
ARKATEX—Southern Building Products Co., Little Rock, Ark.
ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.
ART-TEX—W. E. Loomis, Sherbrooke, P. Q.
ARTISTICO—Capital Clay Co., Des Moines, Ia.
ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.
ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.
BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.
BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.
BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.
BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.
BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.
BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.
CALEDONIAN—Fiske & Co., Inc., Boston and New York.
CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.
CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
CLAYTEX—Walton N. Cable, New York City.
CLOISTER—Western Brick Co., Danville, Ill.
COLONIAL—Capital Clay Co., Des Moines, Ia.
CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.
CORALTONE—Harris Brick Co., Zanesville, O.
CORALROSE—Harris Brick Co.. Zanesville. O.
COLUMBIA—Columbia Clay Co., Columbia, S. C.
CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.
CORSWEVE—Thomas Moulding Brick Co., Chicago. Ill.
CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.
CROWN—Green Fire Brick Co., A. P., Mexico, Mo.
DENISON—Mason City (Ia.) Brick & Tile Co.
DE LUXE—The Standard Brick Company, Crawfordsville, Ind.
DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.
DORIC—Western Brick Co., Danville, Ill.
DUNBAR—United Refractories Co., Uniontown, Pa.
EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.
E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.
ELKCO—Elk Fire Brick Co., St. Marys, Pa.
ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.
ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.
EMBOSTEX—Streator (Ill.) Brick Co.
EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo.
EMPIRE—The Minor Fire Brick Company, Empire, Ohio.
EMPIRE—Western Brick Co., Danville, Ill.
EVERHARD ANTIQUE—Everhard Co., Massillon, O.
EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.
EVERHARD DOUBLE-TEXTURE—Everhard Co.. Massillon. O.
EVERHARD FERN-LEAF—Everhard Co., Massillon. Ohio
EVERLASTING—Mason City (Ia.) Brick & Tile Co.
FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.
FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.
FISKLOCK—Fiske & Co., Inc., Boston and New York.
FRASERCLAY—Fraser Brick Co., Dallas, Texas.
F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.
F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.
F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.
FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG ROUGH TEXTURE — Savage Mountain Fire Brick Co., Frostburg. Md.
FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.
FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.
FULTONHAM-TEXTURE — Fultonham-Texture Brick Co.. East Fultonham. Ohio.
GLONINGER IRON SPOTS—Gloninger & Co., Pittsburgh, Pa.
GOTHIC—Western Brick Co., Danville, Ill.
GREENDALES—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.
GRID—Fiske & Co., Inc., Boston and New York.
HAWK-I-TEX—Capital Clay Co., Des Moines. Ia.
HAYES RUN—Hayes Run Fire Brick Co., Orviston. Pa.
HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston. Pa.
HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
HI-GRADE—Southwest Building Supply Co., Springfield, Mo.
HOCKING BLOCK—Hocking Valley Brick Co., Columbus. O.
HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago. Ill.
HOMESPUN—Thomas Moulding Brick Co., Chicago. Ill.
HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.
INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.
IRONCLAY—Iron Clay Brick Co., Columbus, O
IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.
KELSO—Hayes Run Fire Brick Co., Orviston, Pa.
KEYSTONE—Elk Fire Brick Co., St. Marys. Pa
LADLE—The Zoar Fire Clay Company, Zoar, Ohio.
LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.
LAKE SHORE BLOCK—The Burton-Townsend Co.. Zanesville, Ohio.
L. H. STEEL—The Lock Haven Fire Brick Company. Lock Haven, Pa.
LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.
LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.
M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.
MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.
METALTEX—Columbia Clay Co., Columbia, S. C.
MEXICO, MO.—Green Fire Brick Co., A. P., Mexico. Mo.
MINOR—The Minor Fire Brick Company, Empire, Ohio.
MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.
MOBRIQUE—Harris Brick Co.. Zanesville, O.
MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.
MOSAIC—Western Brick Co.. Danville. Ill.
NATIONAL—The National Fire Brick Company, Strasburg, Ohio.
NO. 1—J. H. Gautier & Co., Jersey City, N. J.
NUVOGUE—Boone (Ia.) Brick, Tile & Pav Co.
OIL—J. H. Gautier & Co., Jersey City. N. J.
OLD HOMESTEAD—Burton-Townsend Co. Zanesville, Ohio.
OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.
OLEAN BLOCK—Sterling Brick Co., Olean, N. Y.
ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.
OXFORD—Southern Brick and Tile Company, Louisville, Ky.
PASTELS—The Standard Brick Co., Crawfordsville, Indiana.
PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.
PERSIAN SPLIT—Thomas Moulding Bric Co., Chicago, Ill.
POS-TEX—Poston Brick Co., Springfield, Ill
POTOMAC-SAVAGE—Savage Mountain Fir Brick Co., Frostburg, Md.
"POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.
PROMENADE—Yingling-Martin Brick Co., Johnsonburg, Pa.
RAINBOW — Burton Townsend Co., The Zanesville. Ohio.
RED ROCK RUFFS—Auburn Shale Brick Co. Auburn, Pa.
ROTEX—Elk Fire Brick Co., St. Marys, Pa.
Gettysburg, Pa.
ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.
RUBYTEX—Columbia Clay Co., Columbia S. C.
RUFTEX—Thomas Moulding Brick Co., Chicago.
RUG—Hocking Valley Pro. Co., Columbus, O
RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.
ST. MARYS—Elk Fire Brick Co., St. Marys, Pa.
SAVAGE MOUNTAIN—Savage Mountain Fir Brick Co., Frostburg, Md.
SHALE-TEX—Streator (Ill.) Brick Co.
SIL-O-CEL—Celite Products Co., Chicago, Ill.
S. M.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. A.—Savage Mountain Fire Brick Co.. Frostburg, Md.
S. M. EXTRA—Savage Mountain Fire Bric Co., Frostburg, Md.
SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.
SPEEDWAY BLOCK—Alliance (O.) Clay Prod Co.
STANDARD—Green Fire Brick Co., A. P., Mexico, Mo.
STANDARD—The National Fire Brick Company, Strasburg, Ohio.
TAPESTRY—Fiske & Co., Inc., Boston and New York.
TAVERN BRICK—Metropolitan Pav. Bric Co., Canton, O.
TEXTUR—Thomas Moulding Brick Co., Chicago, Ill.
THERMO—The Crush Brick Co., Sulphu Springs, Texas.
TIFFANY—Thomas Moulding Brick Co., Chicago, Ill.
TORONTO—Toronto Fire Clay Co., Toronto, O.
TOWNSEND BLOCK—The Burton-Townsend Co.. Zanesville, Ohio.
TURKESTAN—Beaver Clay Mfg. Co., New Galilee, Pa.
TURKO—Rochester (Pa.) Clay Products Co.
UNITED--United Refractories Co., Uniontown, Pa.
U. R. CO.—United Refractories Co., Uniontown, Pa.
U-TEX—Fultonham-Texture Brick Co., East Fultonham, Ohio.
VERTEX—Beaver Clay Mfg. Co., New Galilee, Pa.
VITRI-CRAFT—Schuylkill Valley Vitrified Products Co., Oaks, Montgomery Co., Pa
VOLCANIC—Beaver Clay Mfg. Co., New Galilee. Pa.
WATERPROOF—Gloninger & Co., Pittsburgh, Pa.
WIRE-CUT-LUG BRICK—Dunn Wire-Cut Lug Brick Co.. Conneaut. Ohio.
YALE-TEX—Gloninger & Co., Pittsburgh, Pa.
ZOAR—The Zoar Fire Clay Company, Zoar, Ohio.

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American Truck Body Co. 785
Associated Business Papers 754
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Atlas Powder Co....803

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Harrington & King Perforating Co. 793

BRICK and CLAY RECORD

Established 1892. Now in its thirtieth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland Kansas City
Address all communications to home office

Chicago, May 16, 1922
Vol. 60 No. 10

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Clay Products Manufacturer, Beware!

APRIL CONSTRUCTION RECORDS exceeded all previous monthly figures. It has been another month of increasing activity in all building lines.

The continued upward trend in the awarding of contracts has begun to pinch the stock reserves and production capacity of many material manufacturers. Some clay plants are already in the position of having their production contracted for, for several weeks in advance.

This situation immediately suggests to the manufacturer the opportunity to be compensated for the period just passed of no profit but many losses. He would like to raise prices. He can easily get more for his product because of the great demand. A perfectly natural thought—this is—to enter the manufacturer's mind. He could blame the higher prices on the coal situation. But don't pay any attention to it!

Now is not the time to raise prices! We know that it is being done by manufacturers of other building materials. Steel has gone up; cement prices have stiffened. Lumber has increased. This action, however, should not be construed by the brick manufacturers as a good precedent to follow.

Build Up Good Will

The advisement against the raising of prices is not made because it is felt that the industry could afford to or should be philanthropists. It is advised because of the belief that it is sound business sense right at this time. One of the reasons for the much greater use of clay products in residence construction right now is due to the small differential that exists between permanent and other types of construction. The difference in building costs has been reduced to the point where it is now more profitable to build with clay products.

If the actual difference in first cost of home building constructed of the various materials can be reduced still more, it will be the means of effecting an impetus towards permanent construction that would be the equivalent of years of advertising campaigns or an infinite amount of intensive selling effort.

For clay products manufacturers to increase prices would likely bring the cost of permanent home construction out of the reach of thousands, and render less effective the advertising campaigns that have been building good will for permanent construction. If manufacturers could feel that the difference between a legitimate price and the maximum price that they could get was their contribution to a campaign towards building faith and good will, it would be an excellent thought.

Have Regard for Cost

It would be unwise and unbusinesslike for any manufacturer to imagine that he should fix his price without regard to the cost of production. As we know, this in the past has been altogether too much the case. The clay product manufacturing business has been too often characterized by utter disregard of the cost of doing business. In times when business was good, prices were charged according to what the traffic would bear. When business was bad, price cutting was prevalent. In the long run, an average of these two extremes enabled the plant to make a bare existence.

With the buyers actively bidding for the available supply, it is a simple matter to get better prices. Attractive as this condition may seem to the manufacturer, it should be realized that this is an unhealthy state of affairs. Too great a difference between cost and selling price, whether it be above or below cost, is not conducive to sound merchandising.

Here might be told the story of an actual incident that happened in New York recently. A manufacturer and a dealer met at a luncheon. Nothing about price was mentioned at the luncheon table, but the dealer had heard that a barge load of brick was coming to New York unsold. He wanted that brick. As they rose from the table, the manufacturer told him he could have the barge load that was due to arrive that afternoon.

Both drove over to the dock and saw the boat warped to the pier. There were on the dock other dealers. One rushed up to the owner of the brick and offered $20 per thousand for the load, "sight unseen." While the echo of this offer was still on the air, another dealer dashed up to the dock in his car and said, "Name your price for that brick, I'll take it up to $25 per thousand!"

Passes Up High Price

The dealer with whom the manufacturer had been dining, fearing for the sanctity of the unwritten promise in the face of the rising spot market, drew near the other two dealers and his luncheon host. The competition was keen, but the manufacturer, taking a piece of paper from his pocket, wrote on it "$18" and handed it to the man who had been his guest a few minutes before.

The plant owner or sales manager should not look at the market from the angle of "How much can I get for my product?" Such thinking in the long run is not conducive to the best interests of the company.

Determine your costs,—add a legitimate profit and sell your ware at a fair price. This will build good will for you. Beware the opportunity to get high prices for your goods. This is not the time to raise prices!

You Can Get It!

It will be ready for you—the important announcement is to be made in the next issue of Brick and Clay Record—of immense interest to every reader

Be Sure to Watch for It!

Attorneys Summarize Decision on Rates

Examination of I. C. C. Docket 10733 Shows Reduction in Level of Freight Rates—Especially the Short Haul Rates

MEETING of the traffic committee of the National Paving Brick Manufacturers' Association was held at headquarters in Cleveland, Ohio, on May 5. The recent rulings in the Commerce Commission decision were reviewed and ways of effectively influencing the various agencies concerned toward securing an advantageous interpretation of the conditions embodied in the decision, were discussed.

As the matter stands at present, opinion has it that a great leeway is given the various carriers and there are numerous points that must be ironed out by conferences with the various interests concerned. The N. P. B. M. A. committee will take up these matters with the railroads at once and proceed to actual rate fixing as soon as possible. The expressed opinion at the meeting was that the decision is an aid to the industry, including the membership of the American Face Brick Association and the Hollow Building Tile Association. The traffic committees of these organizations have acted in conjunction with the National Paving Brick Manufacturers' Association committee.

Summary of I. C. C. Report

E. B. Wilkinson of the legal firm of Gallagher, Kohlsaat and Rinaker, one of the leading concerns of its kind, has compiled a complete resume of the report of the commission in summary form, which should be of interest to all manufacturers concerned. The summary follows:

"I have examined the report of the Commission in the General Brick Case, Docket 10733, and submit the following as a summary of the report.

"On the whole in the territory affected there is a substantial reduction in the level of the rate, especially the short haul rates.

"The four base rates fixed by the Commission are, as follows:

Chicago to New York	$6.60	a reduction of $1.10
Pittsburgh to New York	4.20	a reduction of .70
Canton to Chicago	3.15	a reduction of .21
Danville to Chicago	1.75	a reduction of .21

"The rates from points West of Pittsburgh to New York and other Eastern destinations are made on a percentage of the Chicago-New York rate. Examples of the specific rates to New York from Canton, Portsmouth and St. Louis are, as follows:

Canton	71%	Rate $4.70	Reduction $ .80
Portsmouth	87%	Rate 5.70	Reduction 1.00
St. Louis	117%	Rate 7.70	Reduction 1.30

Port Differentials Maintained

"The port differentials are maintained so that the rates to Boston, Philadelphia and Baltimore are fixed from Pittsburgh and related groups and points West of Pittsburgh by adding or subtracting the port differentials to or from the New York rate. For example, Pittsburgh to Boston, the rate is fixed at $4.60 being 40 cents over New York. Clearfield to Baltimore $3.40. Clearfield takes a 20 cent differential under Pittsburgh and the port differential to Baltimore is 60 cents under New York.

"The result of the decision is a 70 cent per ton reduction on business from Pittsburgh and other districts in Eastern Pennsylvania and Western New York to a large territory in the East.

"The Commission fixes a maximum scale for short haul shipments. Based on the average shown in Oliver's exhibit for the same mileage blocks the reductions in trunk line territory range from 40 cents to 50 cents per ton from the present rates.

That maximum scale for trunk line territory is:

Miles	Rate	Reduction
15 and under	$0.90 per ton	50 cents per ton
16- 25	$1.05 per ton	49 cents per ton
26- 36	1.20 per ton	48 cents per ton
37- 47	1.35 per ton	47 cents per ton
48- 59	1.50 per ton	46 cents per ton
60- 73	1.65 per ton	45 cents per ton
74- 87	1.80 per ton	44 cents per ton
88-101	1.95 per ton	43 cents per ton
102-117	2.10 per ton	42 cents per ton
118-134	2.25 per ton	41 cents per ton
135-150	2.40 per ton	40 cents per ton

Benefit Less in Three Eastern Points

"Three producing points in the East which are not differentially related to the Pittsburgh group do not benefit as greatly as do the other Eastern groups. I refer to Perth Amboy, Winslow Junction and Waterloo. The rates from these points to New York, Boston and Albany were involved, especially in relation to the rates from the Clearfield District. The Commission does not attempt to determine the discrimination alleged to exist in the situation, but after fixing rates that are substantially lower than the present rates, states that its decision is without prejudice to another proceeding that may be instituted by the producing groups.

The rates fixed are as follows:

Perth Amboy to Portland	$4.40	Reduction 78 cents
Winslow to Portland	4.70	Reduction 78 cents
Waterloo to Boston	4.80	Reduction 94 cents
Waterloo to Albany	4.50	
Waterloo to New York (Pennsylvania delivery.)	3.20	Reduction 44 cents

(Note.—The reductions are figured on the rates shown in the clay products associations' evidence increased 40 per cent.)

Reductions in C. F. A. Territory

"The rate from Perth Amboy and Winslow Junction to New York are based, in the report, on the mileage scale to Jersey City plus the lighterage charge. In this connection the Commission holds that Perth Amboy should not be grouped on the short hauls to Philadelphia and other short haul points, this would doubtless include New York.

"The reductions granted in C. F. A. territory, including Illinois, are not as large in cents per ton as in trunk line territory. The two based rates fixed by the Commission are reduced 21 cents per ton, but these rates are still on a lower basis than the trunk line rates.

"The reduction of 21 cents per ton from Canton to Chicago reduces all rates from Ohio and Pennsylvania to Chicago 21 cents, because of the differential relationships which are maintained.

"The reduction in the Danville-Chicago rate does not effect a reduction of 21 cents in the Illinois-Indiana groups to Chicago. As a result of the Commission's order in Ex Parte 67, Danville was increased to the same level of rates as Terre Haute, Galesburg, Springfield and other groups, all of which went to $1.96 per ton after the 40 per cent. increase under Ex Parte 74. The result of re-establishing the 1911 differential adjustment and fixing the base rate at $1.75 per ton from

Danville to Chicago for some of the principal points shipping to Chicago are, as follows:

From	Rate Prior to Ex Parte 67	After Ex Parte 67	Present Rate	Under Order 10733
Danville	$1.20	$1.40	$1.96	$1.75
Streator-Ottawa	1.10	1.10	1.55	1.60
Galesburg	1.40	1.40	1.96	1.90
Decatur-Springfield	1.40	1.40	1.96	1.95
Alton	1.60	1.60	2.26	2.15
Joliet	.90	.90	1.26	1.45
Crawfordsville, and so forth	1.50	1.40	1.96	1.85
Brazil-Terre Haute	1.60	1.40	1.96	1.90
Lafayette	1.40	1.40	1.96	1.80
Kokomo	1.60	1.60	2.26	1.90

"The maximum mileage scale established for C. F. A. territory and Illinois is, as follows:

Miles	Rate	Reduction
20 and under	90 cents	36 cents
21-34	$1.05	35 cents
35-48	1.20	34 cents
49-65	1.35	33 cents
66-83	1.50	32 cents
84-101	1.65	31 cents
102-124	1.80	30 cents
125-147	1.95	29 cents
148-150	1.97	30 cents

(The reductions are figured on the 1919 rates for the same mileage blocks in Oliver's Exhibit increased 40 per cent.)

Milwaukee Rate 40 Cents Over Chicago

"The rates to Milwaukee from both Eastern points and Indiana-Illinois are fixed at 40 cents per ton over Chicago.

"The rates to other points are to be checked in by the carriers under the 1911 adjustment using the mileage scales shown as maximum, except where a relationship would result in higher rates, then the differential rate to apply.

"The Commission does not order this scale in for Illinois and Indiana intra-state shipments, but doubtless the carriers will be guided by the decision in checking in intra-state rates.

"The short haul scale practically eliminates the advances under Order No. 28 from the short haul rates.

"Other than the measure of rates the Commission re-establishes the 1911 adjustment.

"The Wabash Valley group is established as a group in all directions except on short haul business, that is to the North and Northwest it goes as a group to points beyond Milwaukee and Madison; the boundary of the group rates going West thru Davenport, for example, is not fixed by the Commission.

"The Commission makes no decision as to measure of rates or grouping in the South, Southwest or Western trunk line.

Uniform Brick List Established

"The Commission established the uniform brick list, excepting common brick on hauls of 150 miles or less. Common brick is described as 'brick not vitrified, made from low grade surface clay, loaded loose in the cars without straw or other protection against breakage and shipped for distances not in excess of 150 miles.' The question is left to shippers and carriers to determine what is common brick in various localities, and if they cannot agree a separate complaint should be filed. The marked capacity of car to govern shipments of common brick.

"The minimum weight is not to exceed 60,000 pounds, marked capacity of car to govern if less than minimum.

"The Commission refuses to change the present method of constructing rates from North to South and leaves in effect the combination made on the river. (No mention is made of rates made on Virginia cities.)

Decision on Rates in Various Sections

"So far as the Northwest is concerned the Commission refers to Mason City Brick & Tile Co. case, Docket 11672, and Ballou Brick Co. v. A. T. & S. Fe Ry. Co., Docket 12708, as dealing more specifically with the rates in and to that territory.

"So far as the Southwest is concerned the Commission refers to Fort Worth Freight Bureau case, Docket 10284, and Memphis Southwestern Investigation and pending adjustment thereunder as specifically dealing with Southwestern rates.

"In connection with publication of rates on the uniform brick list in the South and Southwest the Commission states that the carriers should not publish rates on highest basis or approximately that basis, but should make the new rates such as will reproduce present revenues from all clay products now included in the list. That for that purpose the carriers should take a weighted average of the rates to representative points for a representative period and use that average as the rate applicable to the uniform list.

"The Commission condemns the lack of commodity rates, and finds that there should be a complete line of commodity rates where there is a movement of brick in all territories.

"The foregoing covers, I believe, the salient features of the report."

⁂

BRICK ROADS PREDOMINATE IN SMALL CITIES

More than half of the street paving in cities between 18,000 and 22,000 population in the United States has been studied by the New York City Managers' Association, which recently issued a report.

The paving survey covered a total of 589 miles. The following types comprised 54 per cent. of the total: Asphaltic concrete, 19.2 miles; cement concrete, 51.9 miles; sheet asphalt, 45.2 miles; vitrified brick, 202.3 miles. The remaining 46 per cent. was composed of nine miscellaneous and less durable types, half of this proportion being of the macadam family.

The average age of those pavements of each type still in service is reported as follows: Asphaltic concrete, 7 years; cement concrete, 7.5 years; sheet asphalt, 17 years; vitrified brick, 23.7 years.

⁂

BRICK PERFECT AFTER 100 YEARS' SERVICE

Ancient buildings on the water front at Philadelphia have recently been razed to make way for the anchorage of the proposed Delaware River bridge. In a certain row of buildings, used as dwellings a hundred years ago, caverns were discovered opening from the basements, and extending back under the street from 15 to 20 feet. The caverns had arched roofs of brick, brought from England in sailing vessels, and were surrounded by heavy stone flagging, with an opening in the middle. The doors of these caverns were once under the water of the Delaware River and what has attracted the attention of masons and skilled workmen of today is the fact that not a brick in the caverns shows signs of crumbling, altho they have been in existence 100 years or more, and the work has been highly praised by all who have seen it.

⁂

AMOUNT OF STONE PRODUCTS SOLD

The amount of building stone sold in the United States in 1920 was 15,870,530 cubic feet, valued at $18,948,588, according to estimates made by the U. S. Geological Survey. The year 1921 showed a decrease to 12,000,000 cubic feet with an estimated value of $12,000,000. 35,959,200 stone paving blocks were sold, and this amount rose in 1921 to 48,000,000. The value of paving block in 1920 was $2,898,459, whereas in 1921 the value was but $3,000,000 for a considerably greater output. The output of refractory stone (ganister, mica schist, dolomite) in short tons was 1,735,440 valued at $2,393,537. According to amounts estimated for 1921 this decreased to 800,000 tons valued at approximately $1,000,000.

Wages Governed by Per Capita Money

Wage Levels in Last 80 Years Have Closely Followed Increase and Decrease of Per Capita Money—Prices Not Destined to Decline Greatly

By Halbert P. Gillette

Editor, Engineering and Contracting

A CAUSE-EFFECT RELATIONSHIP is often disclosed by a quantitative relationship. Indeed, when any two things vary quantitatively thru a wide range, in substantially the same degree, it is highly probable either that one of the things is a cause of the other, or that they are both effects of a common cause. Every research scientist is on the lookout constantly for quantitative relationships of the sort just named, for such relationships nearly always disclose a cause-effect kinship.

For several hundred years it has been observed repeatedly that any sudden increase in the quantity of money in circulation in a nation has been soon followed by an increase in commodity prices and in wages. But during the past half century political economists have tended to assign greater weight to the effect of "checking bank deposits" (or "credit currency") than to money in explaining changes in price and wage levels. But if it can be shown that wage levels have moved synchronously with per capita currency in circulation, and not with bank deposits, it will have to be admitted, I think, that political economists have been in error.

Relation of Wages to Per Capita Money

The graph shows two curves, one curve giving relative average daily wages, or wage levels, in America for every year since 1840; the other curve giving per capita currency in circulation for every year since 1870, and for every fifth year prior thereto. The wage curve (or wage index) is based on the average daily wage in 1913 as 100 per cent. From 1840 to 1890 the wage index is that compiled by Faulkner and published in U. S. Senate Report No. 1394. From 1890 to 1921, the daily wage index is that for union labor (see bulletins of U. S. Bureau of Labor). I have checked this wage curve at five and ten year intervals against the average annual wages of employes in manufacturing industries, as deduced from census statistics, and I have found substantial agreement with the wage curve except for 1869 and 1919. In those two years, the rapid change in wage levels following a rapid change in per capita money were such that factory wages did not move in entire harmony with union wages. Thus in 1919, union weekly wages are reported by the Bureau of Labor as having been 48 per cent. above the 1913 level, whereas factory wages in 17 states averaged 76 per cent. above the 1913 level. On the other hand, union wages in 1921 averaged 93 per cent. above the 1913 level, whereas the factory wages indexed were somewhat below the union wage index. In short, union wages usually move more slowly than other wages, both in the rise and on the decline, but in the long run they rise or fall substantially in harmony with other wages.

The wage curve and per capita money curve in the chart show such a pronounced affinity that I believe no scientifically trained man can look at these curves without being convinced that there is a cause-effect relationship between them.

Wages Follow Per Capita Money Circulation

The first question that presents itself is this: Have increases in per capita money preceded or followed increases in average wages? The answer is that wage level changes have almost always lagged behind changes in per capita money. Note, for example, how the per capita money increased during the world war in advance of increases in the wage level.

Note particularly the fact that during the 80 years covered by the chart wages rose from a low level of 40 to a level of nearly 200, and that per capita money showed an almost equal increase. Note particularly that about 1916 both curves show a sharp upward turn, the cause (money) changing in advance of the effect (wages).

It has been argued by many bankers and by some political economists that it is almost impossible to determine whether increase in bank deposits ("credit currency") precedes or follows increase in commodity prices; hence that it is very difficult to ascertain which of the two is the cause and which the effect. But such a difficulty does not confront us in regard to money and wages, major changes in the former clearly preceding major changes in the latter.

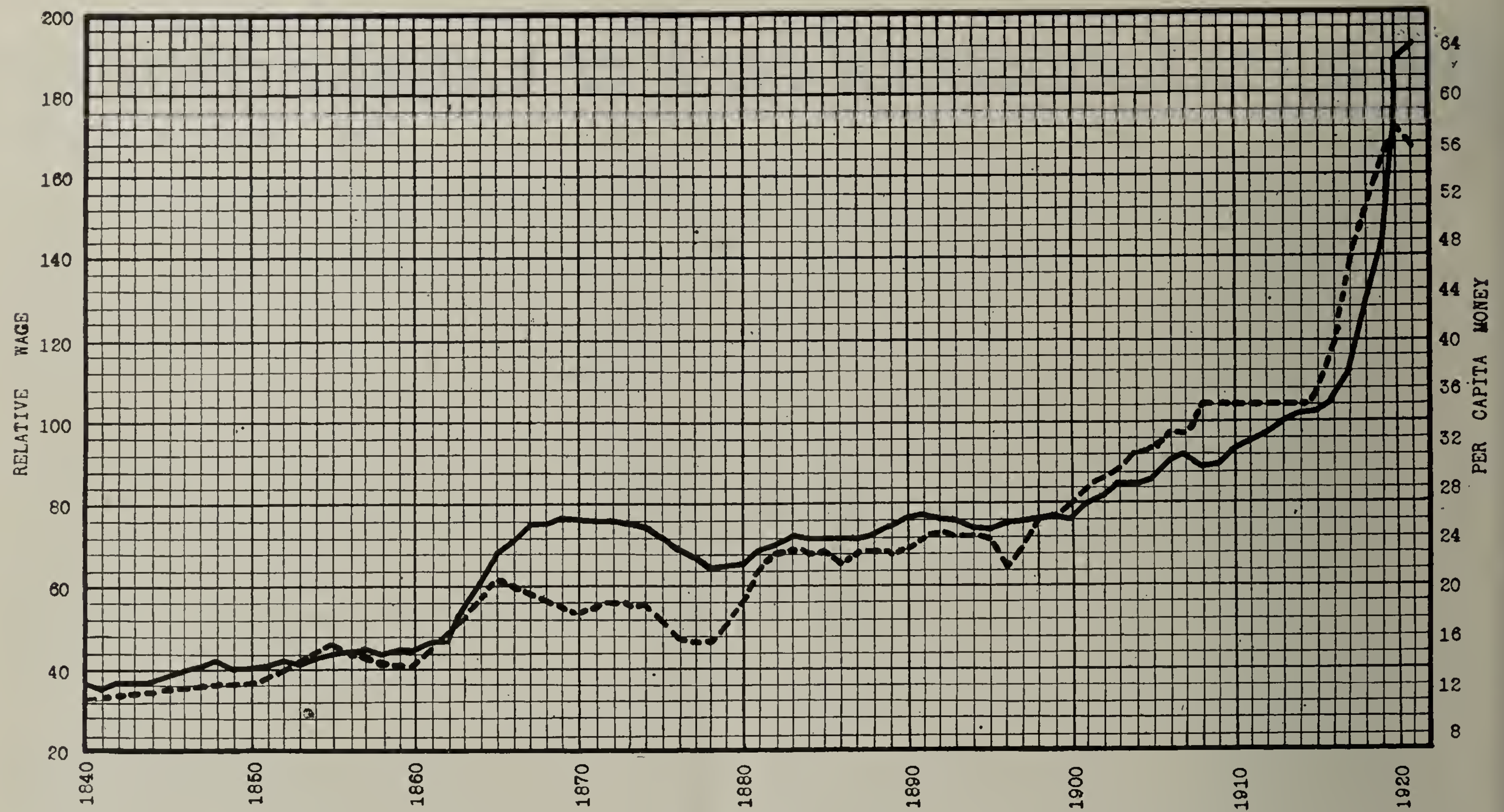
Thus far we have considered merely major changes, or the general trend of per capita money and wages. Per capita money is not the sole cause of change in wage levels, altho it is the major cause. The minor cause is velocity of money circulation, or rate of money turnover, which is an oscillating factor that increases in "good times" and decreases in "bad times," but oscillates about a mean or normal. The product of per capita money and the velocity of circulation gives the wage level.

Relation of Credit to Price Levels

But, asks the banker, "How can you ignore the effect of credit on price levels?" I do not ignore it. An increased volume of credit increases the velocity of circulation of money, because a constant quantity of money is virtually turned over a greater number of times. In this respect all kinds of credit are equally effective, but bankers are prone to speak only of bank credits, or "credit currency."

During the past 45 years, which is as far back as reliable data are available, per capita bank deposits have become six-fold what they were, whereas per capita currency has become three-fold what it was. There are about $6 of bank deposits for every $1 of currency, so that, if increases in bank deposits (or credit currency) have the same effect on wages as currency has, then we could practically forget currency and confine our attention to bank deposits. But if this is done, we should expect to find wages almost twice as high as they now are. If we accept the prevalent theory that the volume of bank credits is as influential as the volume of money in the effect on commodity price and wage levels, we are confronted with this enigma: How is it that wage levels have followed per capita money, but have shown no such relation to bank deposits, altho the volume of bank deposits is six-fold the volume of money? I leave this enigma to the defenders of the prevalent theory that "credit currency" has the same effect on prices and wages as has real currency. Unless they can answer it satisfactorily their theory stands refuted.

According to Prof. King about 75 per cent. of the annual



Wage Levels in America Since 1840 and Per Capita Currency in Circulation. The Dotted Line Indicates Per Capita Money and Straight Line Denotes Wage Level.

income in America goes to manual and mental workers, and 25 per cent. to capital. Hence commodity price levels would move approximately with wage levels in the long run, were it not for changes in efficiency of production. A general increase in efficiency of production lowers prices almost in exact proportion thereto. As there shown the commodity price level is proportional to the product of the per capita current and the velocity of circulation divided by the per capita efficiency of production. I showed that the per capita efficiency of production had never increased more rapidly for a decade than 25 per cent. Hence if we assume a stationary wage level, average commodity prices (or price index) will probably not fall more rapidly than 2.5 per cent. yearly over a long period of years.

Per capita currency in circulation is about 50 per cent. above that in 1913; but our per capita gold is 80 per cent. above that in 1913. In view of the great volume of gold, bank deposits will ultimately increase, and paper money will increase, so for the next few years the prospect is that our per capita currency will increase. It may even rise to a point considerably higher than it reached in 1920 or 1921. In which event wages will again rise, and they may attain a level 20 per cent. or more above the present level.

Business Expects Prices to Decline

It is astonishing to observe with what complacency most business men and bankers talk as if it were certain that price and price levels would recede to the pre-war level within the next four years. Many of them point to the fact that after our civil war, commodity price levels declined until in 1878 the price level of 1860 was again reached. They are ignorant of the factors that determine price and wage levels, yet they talk with great assurance about the prospects of a continual decline of commodity prices and wages. Ask them what are the prospects of further decrease in per capita money, and they have no opinion; yet per capita money is the major factor that determines wage levels. Ask them as to the prospect of a steady increase in productive efficiency and they are equally hazy; yet it is only by a steady increase in productive efficiency that commodity price levels can be lowered in the face of stationary or rising wage levels.

The chart shows that the general trend of wages has been upward for 80 years. The wage level in 1860 was 45 as compared with 100 in 1913. Even before the world war the wage curve was bending more and more sharply upward, following the per capita money curve. The increasing production and importation of gold had for many years been the cause of rising wages in America. But with the introduction of our Federal Reserve Banking System there came a means of increasing the volume of paper money at a rate even faster than before the world war. Our banks were not slow to put out vast quantities of paper money prior to the depression of 1920, and we may be sure that with the revival of business they will put out even greater quantities of federal reserve notes than ever before. Our vastly increased quantity of gold will make it economically safe to issue a correspondingly increased volume of paper money (federal reserve notes), and nothing short of a change in the law is likely to prevent enormous inflation of our currency during the prosperous years upon which we are now entering. Any manufacturer or contractor who contracts for the delivery of goods or structures many months in advance, basing his estimates on existing wages and prices, will run not a considerable risk of loss. This will probably hold true for several years to come.

* * *

SAYS UNIONS SHOULD BUILD HOUSES

Members of trade unions should take advantage of their present organizations and combine to erect houses as a means of ending idleness among themselves, increasing their earnings by such profits as might accrue from the sale or rental of the homes and at the same time relieve the existing oppressive housing situation. This plan is suggested by L. I. Thurston of the Department of Applied Psychology of the Carnegie Institute of Technology.

Mr. Thurston's plan provides that the laboring men build the houses themselves, instead of waiting for contractors to do it, and that whatever financing is needed, such as buying the lots and materials, be done either by the labor organization as a whole or by the individual members subscribing small amounts. He declares the plan would give employment to those who now are idle. In addition the men would receive a portion of the profit which would be made on each house as it was sold.

Business Briefs and Trend

BUSINESS REVIVAL CONTINUING STEADILY.

Increased production, more stable prices, and larger export trade are the principal features shown by figures received by the Department of Commerce for its "Survey of Current Business." Adequate statistics on the distribution of manufactured commodities are not available so that it is impossible to tell how these goods are moving into consumption or how much is going into stocks.

From the figures available in recent months, it is clear that fundamental conditions are much better and there is every reason to expect business to improve steadily, altho perhaps slowly. With world conditions as they are today there is no likelihood of an immediate boom movement. Reconstruction in Europe is far behind what it is in this country and, in general, big economic movements are world-wide in their scope.

* * *

APRIL BUILDING BREAKING ALL RECORDS

The month of April broke all previous records for the amount of construction started, according to the F. W. Dodge Co. Contracts awarded in the 27 Northeastern States during the month amounted to $353,192,000. The previous high record was for the month of July, 1919, the total for that month having been $317,698,000.

Last month's figure represented an increase of 20 per cent. over the previous month and of 60 per cent. over April, 1921. The first four months of this year have rolled up a total figure that is just under a billion dollars and is 65 per cent. greater than the total for the first four months of last year.

There was an increase in every important class of construction projects in April, even in industrial plants, which have been the last group to pick-up. Residential building continues in the lead, amounting in April to $132,478,000, or 37 per cent. of the month's total; public works and utilities amounted to $75,251,000, or 21 per cent.; business buildings, $58,711,000, or 17 per cent. (a notable increase over the previous month); educational buildings, $36,718,000, or 10 per cent.; and industrial buildings, $24,312,000, or 7 per cent.

Contemplated new work reported during the month amounted to $490,926,000.

* * *

WHOLESALE PRICES STABLE—RETAIL DOWN

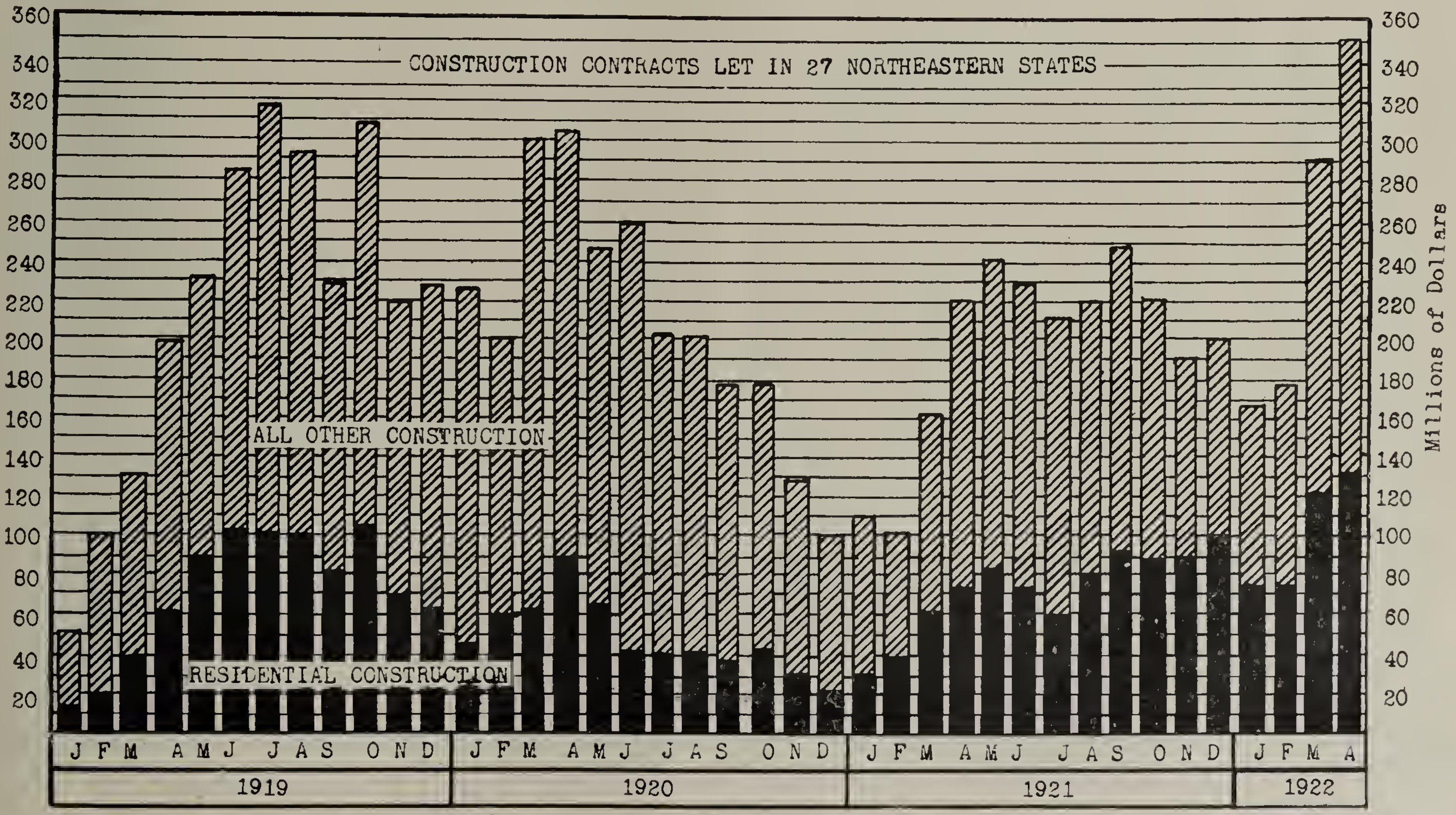
Wholesale price-index numbers indicate a slight rise over the condition in February. On the whole, prices seem to be stabilized for the present at an average level of about 50 per cent. above the pre-war price.

Retail prices, on the other hand, continue to decline. The index of the cost of living, compiled by the National Industrial Conference Board, showed a drop of three points in the total during March. The greatest decline was in the cost of food, altho all other items decreased slightly.

* * *

COMMON BRICK MEN SEE GOOD OUTLOOK

According to the monthly digest of the Common Brick Manufacturers' Association, issued May 1, common brick manufacturers are almost unanimous in expressing optimism regarding the business during the coming months. During the month of April there were produced in the 100 plants reporting, 39,000,000 brick and 33,000,000 were shipped. The number of burned brick on hand at present is 60,000,000 less than it was 30 days ago while orders on the books have shown an increase during the month of



April of 13,000,000 brick. Chicago, which is a typical common brick market, is at the present time delivering brick at the rate of about four-fifths of that great producing center's capacity.

The composite price of all plants reporting is $12.74 as compared with $12.90 a month ago indicating that the trend of price is still downward.

* * *

EQUALIZE INDIANA FREIGHT RATES

Letters have been sent by the Indiana State Chamber of Commerce to Indiana manufacturers of brick, informing them of the decision of the interstate commerce commission, which places Indiana manufacturers on an equal competitive basis with Illinois and Ohio brick manufacturers. It was alleged that these manufacturers enjoyed certain advantages in freight rates over Indiana shippers, especially those in the so-called Wabash valley group. The decision places Attica, Ind., on the Danville, Ill., basis on brick movement to Chicago, Milwaukee and related points. The rate prescribed from Danville to Chicago is $1.75. Brazil and Terre Haute will pay 15 cents a ton more than Danville to Milwaukee.

* * *

EARNINGS OF RAILROADS INCREASE

Complete reports just filed with the Interstate Commerce Commission show that the railroads of the country had a net operating income in March of $83,510,888, which, on the basis of their tentative valuation, would be at the annual rate of return of 5.83 per cent., compared with $30,807,066 or 2.15 per cent, in that month last year.

For the first quarter in 1922 the carriers had a net operating income of $160,998,907, which would be at the annual rate of return of 4.51 per cent.

COAL PRICES ADVANCE

Production of coal has struck a temporary level a little above the four million ton mark per week. The output for the week of April 29 was 4,150,000 tons and early reports indicate that the week of May 1 to 6 will show a like amount. The strike situation is essentially unchanged. No significant break in the ranks of the striking miners has occurred, altho a small number of men have gone back to work in Texas.

Prices in those fields where quotations are still being given are advanced generally over those prevailing immediately before the strike. The average advance is approximately 50 to 75 cents per ton. The following prices are the latest available:

	Mine Run	Prepared Sizes	Screenings
ILLINOIS			
So. Illinois	$3.00-350	$3.25-3.65	$2.50-3.00
Cent. Illinois			
Peoria District	Quotations withdrawn on account of strike.		
Northern Illinois			
INDIANA	Quotations withdrawn on account of strike.		
KENTUCKY			
Southeastern	2.50-3.00	2.50-3.00	2.50-3.00
Northeastern	2.50-3.00	2.50-3.00	2.50-3.00
Western	2.50-2.75	2.50-2.75	2.50-2.65
OHIO			
Pittsburgh No. 8	2.75-3.00	....	2.75-3.00
Hocking and Pomeroy fields quotations withdrawn on account of strike.			
WEST VIRGINIA			
Smokeless	2.00-2.50	....	2.00-2.50
Kanawha and Logan	2.00-2.50	2.00-2.25	2.00-2.25
Fairmont	2.50-2.75	2.75-3.00	2.25-2.50
PENNSYLVANIA			
South Fork	3.50-4.00	....	....
Miller Vein	3.25-4.00	....	....
Good Clearfield	3.00-3.25	....	....
Ordinary Clearfield	2.75-2.90	....	....

The Building Situation

BUILDING OPERATIONS are increasing in the important New England districts, and the marked advance in industrial work during the past fortnight is an encouraging factor. The textile mills and the metal-working industries are commencing their spring expansion programs, and heavy call for brick and other burned clay products is recorded at Boston, Worcester, Bridgeport, Portland and other points.

May construction seems likely to exceed the record figure for this territory established in April, of $44,500,000, as compared with approximately $39,000,000 in March 1920, the previous high figure. The April totals were over 50 per cent. greater than those of March, 1921.

Bricklayers at Boston have declared a strike with demand for an increase in wage scale to $1 an hour, as against a prevailing rate of 90 cents. The action is one of localized character, and is not expected to have any effect on the men in other cities of this district. Employing contractors are opposed to the advance, and with many jobs operating on an open shop basis, it is not likely that the demand will be met for a considerable time.

New York Breaks Records

Residential operations at New York have advanced with the spring season to a point that threatens a shortage of building materials. The Bronx and Brooklyn boroughs are recording new gains in the line of apartments and houses, and from $8,000,000 to $10,000,000 in advance work is in sight. Weekly contract awards in the metropolitan district are running from $15,000,000 upwards.

Every available barge load of brick from the Hudson River district coming into New York is absorbed upon arrival. The shipments range from 35 to 40 barges a week, with equally heavy arrivals from the Raritan River section. The wholesale price has advanced from $16.50 to $18 a thousand, and with the growing market strength, higher levels are predicted.

There is still agitation between the employers and workers in the New York district regarding an equitable wage scale, with no immediate settlement in sight. The Building Trades Employers' Association has refused to enter into a new agreement for a year at an increased scale; and the men are not satisfied with prevailing figures.

April a High Month at Newark

Building operations at Newark, N. J., reached a total of $2,089,112 during April, as compared with $1,323,562 for the corresponding month of a year ago, an increase of $765,550. May has opened with the same characteristic building spirit, and indications point to a still further advance in this month. Two-family dwellings are taking the lead over all other types of structures. Wages of masons, laborers and iron-

(*Continued on page* 797)

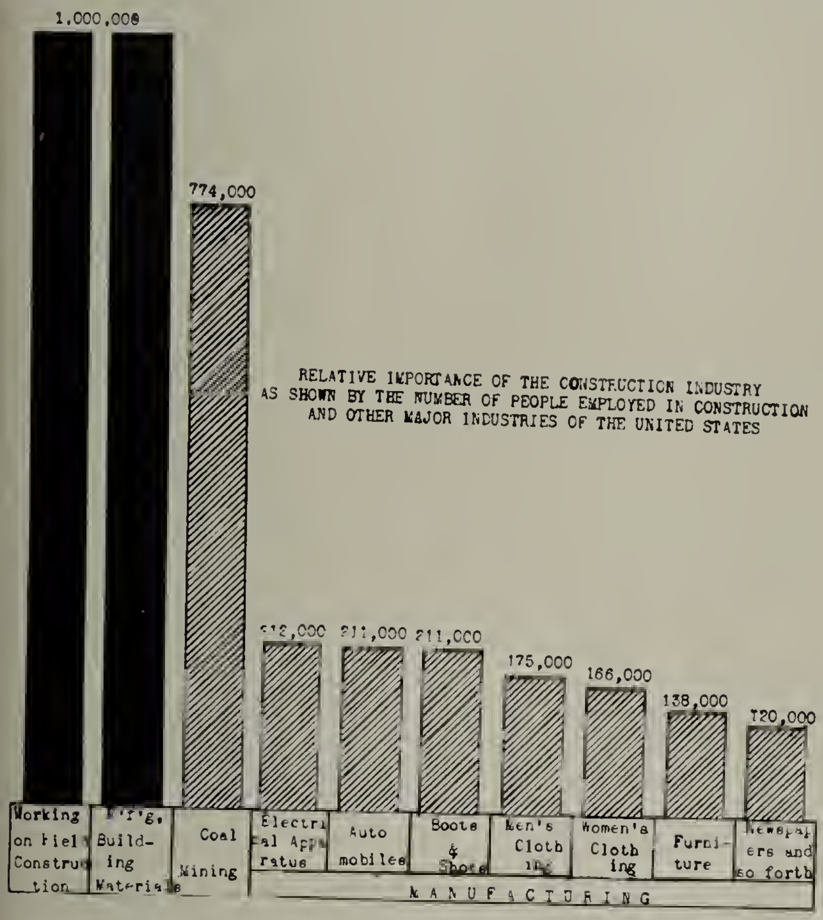
Project "American Construction Council"

National Leaders Meet at Cleveland and Draft Plans for First Officially Representative Advisory Body for All Divisions of Building Industry—Every Interest to Be Recognized—Federation and Congress Promise Support of New Program

PRELIMINARY ARRANGEMENTS were completed in Washington Wednesday, May 3 for the organization of the American Construction Council when Secretary of Commerce Hoover agreed to accept the chairmanship of the organization meeting to be held in Pittsburgh, June 19. Franklin D. Roosevelt, of New York, formerly Assistant Secretary of the Navy, has consented to accept the presidency of the organization. A preliminary conference was held in Cleveland on April 28 and 29 at which time initial plans were drafted.

The purpose of the Council is to place the construction industry on a high plane of integrity and efficiency and to correlate the efforts toward betterment made by the existing organizations thru a conference association representative of the whole industry and dedicated to the improvement of the service which the construction industry renders to Communities, States, and Nation.

The popular belief is that American industry is divided into four basic industries: (1) agriculture, (2) manufacture, (3) transportation and communication, (4) mining and forestry. Such a classification leaves out of consideration, however, what has been demonstrated after investigation to be the second most important industry in the country, namely construction. When considered from the standpoint of the yearly volume and money involved, this comes second only to agriculture and is among the first of all industries when expressed in terms of the labor. Investigation has shown that the number of workers, who together with their families depend upon the construction industry for a livelihood totals approximately 11,000,000 persons. It was conservatively estimated that 24 per cent. of our annual capital accumulation and over 50 per cent. of our national savings are absorbed by this great industry every normal year. Approximately nine-tenths of all iron, copper and zinc and 95 per cent. of all the lead produced in this country are consumed in construction.



This Chart Was Prepared by Milan V. Ayres, Statistician for the Associated General Contractors.

Yet in this mighty industry each element has, with rare exceptions, acted by itself, looking after its own interest, neglectful generally of the rights of the other elements and, often indifferent to the rights of the public.

All branches of the industry are represented in the new body and have been divided into the following groups, each with equal voting power: Architects, engineers, general contractors, sub-contractors, construction labor, material and equipment manufacturers, material and equipment dealers, financial, bond, and real estate interests, public utility construction departments, and the construction divisions of federal, state, and municipal governments.

Equal Voting Power for Each Group

The conference proposal provides that each group should be given equal voting power, that there shall be an executive board of 20, made up of two members elected by each group.

Within each group delegate representation at the annual Council meetings shall be determined in whatever way seems most feasible to the members thereof, but that voting power of each group in full Council shall at all times be equal. In this connection it was decided to permit each group the privilege of splitting its vote upon any subject before the Council, but providing that in all such cases the voting of a group "shall be recorded in proportion of the vote cast in the group."

So far as is known, this is the first time in the history of American industrial development that any industry has been represented by an organization in which all the elements have been brought together for the mutual interest of the industry and the public.

Council is Result of Much Effort

This action is the culmination of many efforts that have been made in recent years to solve the difficult problems thrown on the industry by reason of its size and complexity and the accumulation of construction due to the cessation of building activities during the war. The immediate inspiration for the movement has come from the interest displayed by Mr. Hoover in the industry and his belief in the importance of its revival for the awakening of business activity. In accepting the chairmanship, Mr. Hoover emphasized the need for an all-embracing organization such as the Council and pointed out that if it had been in existence before the present depression, it would have been invaluable in furnishing to the public unbiased facts pertaining to the different phases of construction, thus probably winning for the industry, the confidence of the public.

To Act in Advisory Capacity

The organizers of the Council are planning to take up a number of important lines of work, among them the following: Code of Ethics for the industry, development of a national building code, a research and statistical bureau, lengthening of the construction season, elimination of waste, standardization and dimensional simplification, development of apprenticeship systems, and encouragement of local study and better understanding of building situations.

The Council does not propose to concern itself with problems that distinctively come within the province of a particular group, except such as may be detrimental to the general welfare of the construction industry and the public. The Council shall act only in an advisory capacity in its relations to its member associations.

Membership in the Council, it is proposed, shall be of two classes: (1) association and (2) sustaining, to the first of which all national associations, state, regional or independent local groups of construction interests are eligible, and in the second place individual firms and corporations may be enrolled as sustaining members with the right of the floor at all Council meetings, but without voting power.

E. J. Russell, of the Executive Committee of the American Institute of Architects has been chairman of the preliminary meetings, and the organizing work is in the hands of a committee consisting of the secretaries of the American Institute of Architects, the Federal American Engineering Societies, the Building Trades Department of the American Federation of Labor, the National Federation of Construction Industries, the National Lumber Manufacturers Association, and the General Manager of the Associated General Contractors of America.

* * *

FREIGHT CARRIED IN 1921 AND 1920

A comparative statement giving the total tonnage of freight carried in 1921 and 1920 issued recently by the Interstate Commerce Commission shows that the total tons carried decreased 25.15 per cent. in 1921 as compared with 1920.

Products of agriculture was the only class of commodities which shows an increase in 1921 over 1920, the percentage of increase for total tons carried being 1.21 per cent.

The comparison, by general classes of commodities, follows:

Classes of Commodities:	Year ended Dec. 31,1920	Year ended Dec. 31, 1921	Per cent of Decrease
Products of Agriculture	220,049,724	222,722,672	* 1.21
Animals and Products	44,853,503	41,794,508	6.82
Products of Mines	1,209,097,673	878,645,798	27.33
Products of Forests	195,579,878	148,138,456	24.26
Manufactures and Misc	494,556,078	333,150,182	32.64
Merchandise—all L. C. L. Traffic	89,901,495	67,165,435	25.29
Total	2,259,983,278**	1,691,617,051	25.15

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*Increase.

**Includes 5,944,927 tons for which distribution by classes of commodities was not furnished.

* * *

A HELPFUL BOOK ON ENGINEERING

There are perhaps many plants who would find in planning the remodeling of their plant a handbook of practice in mechanical engineering problems useful. Kent's Mechanical Engineers' Pocket Book is very helpful in solving any problem relating to engineering. It contains formulas, tables, data and practice which are from reliable sources and mostly taken from actual practice.

Brick and Clay Record has arranged to list this book in its book department and any of its readers may order same, the price of which is $7.

* * *

CHANCE TO SELL DRAIN TILE

The Agricultural Experiment Station of the Iowa State College of Agriculture and Mechanic Arts at Ames, Ia., has issued Circular No. 78 on "Dry Rot of Corn." This is an evil which is causing great crop damage and much monetary loss to the farmer. Investigations have revealed the fact that dry rot is encouraged by high temperature and rainfall, and that areas in Iowa State with less than five inches of rainfall in August, 1921, were relatively free from dry rot. No doubt efficient drainage systems and extensive use of drain tile would overcome this evil to a large extent.

* * *

DRAINAGE EXPERIMENTS TO PROVIDE STANDARDS FOR MINNESOTA

At Little Swan, Minnesota the agricultural engineering division of the University of Minnesota will design and install a drainage system on the Hibbing Public School Demonstration Farm. This farm lies in a belt of a half million acres of potentially prime agricultural land which is now largely swamp, over all of which drainage will always be the principal controlling factor in cultivation. Nothing is now known concerning the design of drainage systems to suit this area, their cost and the response of the soil to drainage and these experiments will be doubly valuable in that they will show to what extent the land may be made more tillable and will bring an increased demand for clay tile. The cost of the installation for the 80 acres is estimated at approximately $3,000 and the research will be carried on over a series of years. Standard clay or shale tile will be used entirely on this installation.

The tile system is to serve a dual purpose. The School Board wants the land drained and the open ditches eliminated. The university wants information upon which drainage designs in that part of the country can be based.

In carrying out the work the fields to the north which are now under cultivation will be completely tiled. The central field to the east has had the stumps removed lately and this field will be tiled completely. The field to the south has not yet had the stumps blasted and only the principal tile lines will be installed here at this time. This will be for the purpose of drying up the swamps so that the workmen can more readily get in and do their clearing. For the purpose of laying these tile lines, a strip will be cleared of stumps so that the drains will not be injured by future blasting. After the land is cleared the balance of the installation will be made.

The research installation will consist of wells in series for observation of the movement of the ground water under the various conditions. There will also be a rain gage and measuring wires at the outlet of the system. Maximum and minimum thermometers will also be installed at the different series for the purpose of measuring surface and subsurface temperatures under the various conditions. When complete, the records will be correlated and the results published for the benefit of the farmers in that district.

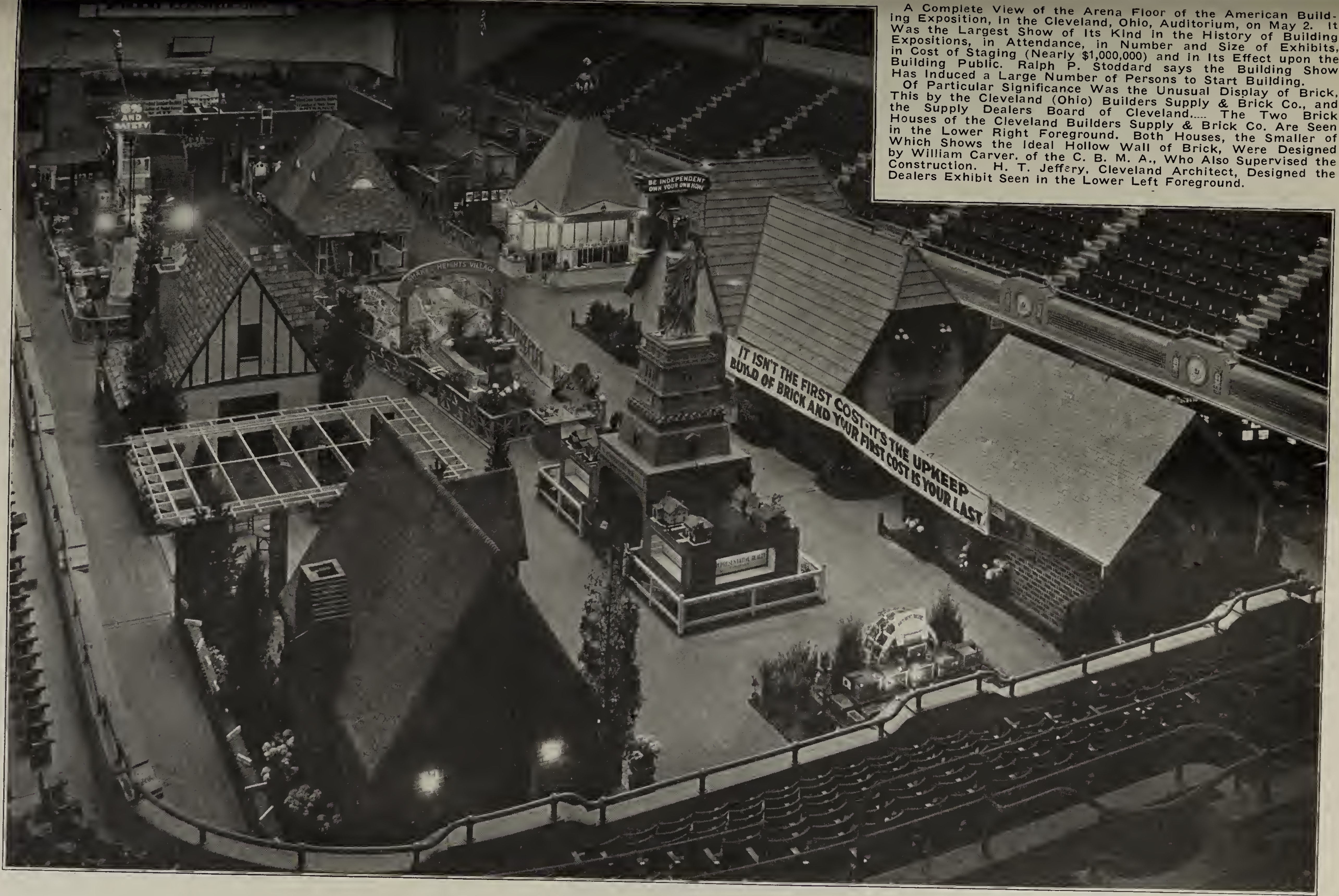
The tile required is as follows: 585 lineal feet of 12 inch tile; 855 lineal feet of ten inch tile; 1,585 lineal feet of eight inch tile; 595 lineal feet of seven inch tile; 975 lineal feet of six inch tile; 1,975 lineal feet of five inch tile; 8,080 lineal feet of four inch tile.

* * *

AIM AT STANDARDIZATION OF NON-METALLICS

Standardization of numerous products of the different non-metallic industries should greatly reduce the cost of manufacture and eliminate much waste according to Oliver Bowles, mineral technologist of the U. S. Bureau of Mines. Feldspar, for instance, is standardized neither as to grain sizes nor purity. Specifications may call for fixed percentages of soda and potash, or such requirements may be omitted. Ground feldspar is commonly reduced to 140 mesh, but there is no standard requirement in size.

A notable accomplishment in the direction of standardization of non-metallics was the decision of the paving brick manufacturers which, thru the cooperation of the Department of Commerce eliminated 59 out of 66 styles of paving brick being produced, leaving but 7 standard types of this material.


IT ISN'T THE FIRST COST-IT'S THE UPKEEP
BUILD OF BRICK AND YOUR FIRST COST IS YOUR LAST
BE INDEPENDENT
OWN YOUR OWN HOME
SHAKER HEIGHTS VILLAGE
AND
SAFETY

A Complete View of the Arena Floor of the American Building Exposition, in the Cleveland, Ohio, Auditorium, on May 2. It Was the Largest Show of Its Kind in the History of Building Expositions, in Attendance, in Number and Size of Exhibits, in Cost of Staging (Nearly $1,000,000) and in Its Effect upon the Building Public. Ralph P. Stoddard says the Building Show Has Induced a Large Number of Persons to Start Building.

Of Particular Significance Was the Unusual Display of Brick, This by the Cleveland (Ohio) Builders Supply & Brick Co., and the Supply Dealers Board of Cleveland..... The Two Brick Houses of the Cleveland Builders Supply & Brick Co. Are Seen in the Lower Right Foreground. Both Houses, the Smaller of Which Shows the Ideal Hollow Wall of Brick, Were Designed by William Carver. of the C. B. M. A., Who Also Supervised the Construction. H. T. Jeffery, Cleveland Architect, Designed the Dealers Exhibit Seen in the Lower Left Foreground.

Is the Farmer Buying Drain Tile?

Manufacturers Tell About Situation in Farm and Road Tile Work —Iowa Primary Roads Used 5,000,000 Feet of Tile in 1921

AS THE DRAIN TILE manufacturer's business is dependent upon the farmer, it is only natural for the industry to have passed thru a stormy period parallel to that of the American farmer. In different sections of the country the present condition of the drain tile business differs. Some sections report all the orders that can be filled, while others find business still very poor.

The farmer, being a conservative man and located away from the centers of industry, it is but natural that his reaction to the immediate industrial situation would be slow. Moreover, the stunning blow that he received in 1920 and 1921 has shaken his confidence with the result that he makes doubly sure on any proposition that he entertains.

One of the Best Arguments for Drain Tile. Greater and Better Crops Are the Inevitable Result

During recent months, industry has not only turned the corner but has gone a considerable distance up the road of progress. This is shown by the increased activity in most lines of business. However, the farmer, being slow to react and with his confidence shaken, has not kept pace with other industries, with the result that he is slow in making his buying power felt. But, indications point to his gradual resumption of normal buying, as is shown by some of the reports of drain tile manufacturers in various centers.

Business Both Good and Bad

For instance, a drain tile manufacturer in Ohio reports as to his drain tile business this year, "It was very poor during winter but has been very good ever since March 15." From this it appears that the farmer, after he saw the value in farm products increase this spring, was being convinced of the turn for the better, and hence bought.

A Mississippi manufacturer of drain tile states that his business this year has been good, while a Kentucky manufacturer quotes his business as being "bum."

One Illinois manufacturer states that his business is coming along very slowly, and only at about one-half per cent. normal, whereas another Illinois manufacturer reports his business as "being very good—considering the scarcity of money."

In Minnesota a plant reports fair business, while in Iowa one plant reports business as being very poor, against another plant's report of 75 per cent. normal. An Indiana plant finds business, "quite fair."

These nine manufacturers were asked as to whether the farmer was buying more tile this year than last year, and the following interesting answers were given: Ohio plant—"About normal now." Mississippi concern, "Yes." Kentucky concern, "Yes, a little." Both Illinois concerns, "No." Minnesota concern, "No." Iowa concern, "No." Other Iowa concern, "Yes, we think the farmer will buy 50 per cent. more tile during the year 1922 than he did in 1921." Indiana concern reports "Business much better than a year ago."

Opinons Regarding Fall Business

As to what the drain tile manufacturers are expecting in the nature of fall business opinions vary. Some of the manufacturers report that this will depend upon the crop outlook, while three of the manufacturers anticipate a very good farm tile trade next fall, unless the season is very unfavorable.

Some of the manufacturers of tile are doing local advertising, and some are not doing any. Most of them report that the farmer is convinced of the value of tile drainage, and hence needs no education. However, Brick and Clay Record feels that some of the manufacturers are overlooking the fact that the farmers need urging, and that salesmanship is required to get him to buy now. It is quite evident that a great deal of drain tile business is lost and that many tile plants are idle simply because they are neglecting to go out into the field and sell. Instead they are waiting for orders to come to the plant without any sales effort.

Tiling is a Simple Matter. One Man Can Do It Unassisted.

It is interesting to note that one plant in Illinois is aiding the farmer to the extent of offering him time settlements at six per cent. interest, on all drain tile business.

It seems that this is a pretty good proposition for the tile man, and might be used effectively by other manufacturers in selling to the farmer who balks because of lack of funds.

Preach Road Drainage

It is remarkable the lack of understanding in a good many states of the value of proper drainage of roads. In fact, there is perhaps only one state in the union where full appreciation of road drainage is had. The State of Iowa has an excellent road drainage system for all of its primary roads, and uses considerable tile. For the year of 1921 on the primary road system alone, in the State of Iowa, there were laid approximately 5,000,000 feet of drain tile. In addition to this there was a large quantity of tile laid on the county road systems. Unfortunately, however, in Iowa the manufacturers have cut prices so that this business is practically unprofitable. But this, of course, is not the fault of road drainage as it is of the lack of business principles among some of the tile manufacturers.

In other states the amount of drain tile used for road drainage is comparatively small, and manufacturers should put forth a campaign to educate the engineers who are not up-to-date on the question of thoro subdrainage of road beds.

When engineers have learned that thoro drainage is the first essential step in road building, it will provide a market for a great many drain tile, insure better roads, reduce the cost of maintenance 50 per cent., and double the life of the roads. There is an unusually large number of road construction jobs being carried on this year in practically all states of the union, and the tile manufacturer should lose no time in putting forth strenuous efforts to open up this business for himself.

Both the farmer and the county road engineer need more education in the value of tile drainage, and more intensive sales effort in the drain tile field is necessary. More active and genuine salesmanship is what the tile industry needs right now. The business is there for the go-getters.

* * *

BILL ASKS FOR PRICE STANDARDIZATION

Price standardization is the theme of the Stephens-Kelly bill (HR 11) now before Congress. Certain organizations in the country are making strenuous efforts to have this bill passed. The bill provides: "That in any contract for the sale of articles of commerce to any dealer, wholesaler or retailer by any grower, producer, manufacturer or owner thereof, under trade mark or special brand, it shall be lawful for such vendor (seller) to prescribe the uniform price and manner of settlement at which the different qualities and quantities of each covered by such contract may be resold, provided that certain conditions are complied with. . . ."

* * *

RAILROAD OPERATING EXPENSES

The extent to which the earning capacity of the railroads has been impaired in the past few years is shown in the following tabulation of the net operating income of the roads and the operating ratios:

Year	Operating Revenues. (Millions)	Net Operating Income. (Millions)	Operating Ratio
1916	$3,679	$1,102	70.04
1917	4,704	971	76.15
1918	4,969	713	81.58
1919	5,231	530	88.96
1920	6,250	*22	100.35
1921	5,716	606	89.39

*Deficit.

The operating ratio is the percentage which operating expenses bear to gross earnings. In other words it represents the number of cents paid out in operating expenses from every dollar received from transportation.—*Railroad Data*, May 8, 1922.

* * *

COMPLETE 11,017 MILES OF ROADS

Federal-aid roads completed since 1916 totaled 11,017 miles on March 31, an increase of 8,016 miles during the preceding 12 months, according to the Bureau of Public Roads. The general average cost per mile for the United States was $17,120.

Strike Threatens Rushing Production in Hudson River District

STRIKES among brick plant laborers at manufacturing centers along the Hudson river threaten to greatly complicate the already tense situation with respect to brick supply in that market, says the Dow Service daily building report of May 6, 1922.

Meanwhile hurry calls are being sent into the southern labor market by brick manufacturers of three states to obtain help in sufficient quantities to offset the conditions making a strike among the brick plant workmen effective in the present crisis and to prevent not only an interruption of production of new brick toward New York, but continuous loading of the dwindling supply of old brick so as to prevent a further cessation of building construction among many allied trades in that city and vicinity.

Five boatloads of brick arrived in the city at the week end and were promptly sold. There are now only about 15,000,000 brick remaining of the 1921 burn. The price being quoted on the wholesale brick market Saturday morning was $18 to $20 a thousand wholesale, altho offers have been made for good brick on the spot market at prices above these figures.

The continued east wind of Wednesday, Thursday and Friday permitted the release of loaded brick barges stranded upon the mud flats of the upper reaches of the Hudson for some days, thus adding slightly to the number of barges that were made available to purchasers at the opening of the market May 8.

Production Being Rushed

Brick manufacturers are rushing production of new brick as fast as possible, considering the difficulty of getting coal and the strike fever that seemed to be spreading among the brick plant workmen at the week-end. Reasonable wage increases have been granted by some manufacturers to keep the works in operation and based upon the ability to bring in sufficient help to prevent the interruption of new brick manufacture and to man the 80 per cent. of machine capacity of the Hudson river brick manufacturing district, manufacturers hoped to prevent an utter failure of the North river brick supply between now and June 1 when the first of the 1922 brick burn is expected to begin arriving here.

While other price movements have been unsteady to upward, that of lumber had been remarkably stable. This industry is now producing within 15,000,000 feet a week of normal, while orders are running about 5,000,000 feet per week above normal and shipments are about 5,000,000 feet per week below normal. Under such conditions it is not to be expected that prices of lumber will long remain where they are.

Judicious Purchasing of Refractories

Tells Refractories Manufacturers Association That Yardstick for Measuring Properties and Determining Values is Necessary—Consumer Has Little to Guide Him in Purchase of Refractories

By W. A. Hull [*]

THE GOVERNMENT has gone in for business methods, and one of the things that is getting a beneficial shaking up is the system of purchasing. Now it so happens that there is, in the Federal Government, a Department of Commerce. There are several classes of people in the United States, including many of our important manufacturers, who are not as keenly or as constantly aware of the existence of the Department of Commerce as of one or two of the other departments. Some of them doubtless think of the Department of Commerce simply as the department of which Mr. Hoover is secretary. Well, that is not a bad introduction to it, in case one has never made its acquaintance before. Not only is Mr. Hoover secretary but the whole department knows he is secretary and has known it for some time. He has taken the secret out of secretary and given the department a dynamic form of government. That is a mighty good thing, for the Department of Commerce is naturally called on for full steam ahead.

Create Federal Specifications Board

It was entirely logical and natural that the Bureau of the Budget, in taking up the problem of systemizing the federal purchases, should find some things lacking in the matter of specifications. This led to the creation, by executive order, of a Federal Specifications Board, with Dr. Stratton, Director of the Bureau of Standards, as chairman. Now the matter of specifications was by no means new to the Bureau of Standards, or to Director Stratton, or to Mr. Hoover. In fact, Mr. Hoover had made a most impressive demonstration of what could be done with specifications—of the right kind and used in the right way. In making wartime purchases of clothing, blankets and provisions for use in the Belgian relief work, he had been amazed at the extremely reasonable prices at which goods of excellent quality could be obtained by the purchase of a large quantity of a single article to be made to a simple, definite specification. Now to make a specification, it is necessary to have standards of quality. Mr. Hoover found the Bureau of Standards working on standards of quality and he gave the signal to step on the gas.

And this is merely a bit of current history to make it clear why the Bureau of Standards is interested in the purchase of refractories.

Strive for Standards of Quality

The guiding star in all the research work on standards of quality and in the preparation of specifications is the elimination of waste. Standards of quality tend to prevent uncertainty and confusion. They tend to prevent the purchase of high priced things where low priced things would do as well; they tend to prevent the use of low priced things where high priced things are required and would be an economy; and sometimes they prevent buying the high priced thing when there is a better quality to be had at a lower price. This last occurrence is not at all unusual—not nearly as uncommon as it should be.

At the Bureau of Standards we receive requests from consumers for specifications for all sorts of things. Those who make these requests want something that will insure their getting good goods. They can not be guided entirely by the price of these things nor by what the advertisements say about them. In some cases it is extremely difficult to judge of relative values by performance in service. Take paints, for example, and lubricating oils; you manufacturers know how hard it is to tell what you are getting for your money in things like this.

United States Makes Better China Than Europe

The same is true, tho to a less extent, in the purchase of dishes. Large purchasers of hotel china are keenly interested in standard tests for tableware and the bureau is supplying them. Until these tests were put in use we did not know that we were making better hotel china at home than we were importing from Germany, England and even from France. Now that we are testing dishes, we can say that when specifications for this class of goods go into effect, the foreign producers will have something to worry about besides the tariff.

A number of the governmental departments are considerable users of refractories and one of the things that the Federal Specifications Board has taken up is specifications for refractories. A survey of the situation brought out the fact that the purchasing methods of the various departments were not at all the same. One department was buying on specifications and another was not and the specifications of one department were not similar to those of another. As a result of this condition, the Bureau of Standards was asked to draft specifications for the types of refractories that are purchased by the goverment departments.

Bureau Had Little Information

Now the less one knows about refractories, the easier it is to write specifications. Perhaps it would be better to say that in order to make a good job of it, it is necessary to have a large amount of information and at the same time a reasonable allowance of common sense. Now at the Bureau of Standards we may have common sense enough for a job like this—anyhow we had sense enough to know that we didn't have anywhere near enough information; so we sent out for it. As a result, some of the best equipped men in the United States, from both the producing and a number of consuming industries have responded to the invitation to join forces and work this thing out together. Two of these conferences have been held. At the first, the whole subject of tests was discussed, up one side and down the other. Everyone's opinion on every standard or near standard test was brought out. The effect was that of clearing the decks for action. In the second conference, a complete set of requirements for fire brick for coal fired boilers was drawn up. Of course there are special conditions encountered in the use of different kinds of coal in different types of boiler furnaces and it would be impossible for any group of men to draw up in one day specifications for all the special qualities of refractories that would be best suited to meet them. We thought we had done a day's work when we had expressed, in terms of simple test requirements, what we would consider a satisfactory grade of brick to take care of the common run of modern, high duty, coal fired boiler service, but we put in a little overtime and wrote up the requirements for the clay.

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[*] Published by permission of the Director, Bureau of Standards.

Tentative Specifications Drafted

Of course these requirements have not been decided on in anything like a final way, but we have a conviction that that day's work is a milestone in the progress of the refractories industry for this is the first instance that we know of where American producers and consumers have joined forces and drafted even a tentative set of specifications for refractories for a specific service. It may be that it is only now that the industries are ready for such a thing. The activities of your association have unquestionably had much to do with bringing the refractories manufacturers to a state of mind necessary to a whole-hearted cooperation in a job like that. Association activities have a remarkable effect on the members of an association and on an industry. We have seen how it works out in other industries and it requires no supernatural vision to see how it is working out in yours.

One of the things that has been made evident by these conferences that have been held at the Bureau of Standards is that there is a wealth of information about refractories, under cover. Perhaps it is too soon to expect it to come out; perhaps the association is not ready to take the step; but if the cards could all be laid on the table, face up, it would go a long way toward straightening out the whole refractories situation.

Most Information Kept Secret

What I mean is this: a steel company or a corporation which builds coke ovens makes tests and keeps records of performance and the results, except for certain general facts or conclusions are held as confidential information; the individual refractories manufacturer and the Refractories Manufacturers' Association make tests and get, when they are able, records of performance, and the results are held as confidential; the Bureau of Standards makes a valuable investigation in which the properties of something like 70 brands of fire brick are determined and the results, so far as the names of the brands are concerned, are held as confidential. Think what a help it would be, in the writing of specifications and in the intelligent purchase of refractories, if all this information could come out in the open. I would hardly have the hardihood, at this time, to ask that such a course be followed. I realize that you manufacturers would hesitate to see your pet brands paraded for inspection, stripped of all the bunk and mystery with which your salesmen have kept them clothed and padded for decades; but I want to point out the alternative.

Purchaser Knows Little of Refractories

For a long time, we have been deceiving ourselves with the idea that the trouble with the refractories situation is that the user will not pay the price for the quality and the workmanship and the uniformity that he is demanding in refractories and that consequently we cannot give them to him. Well, whose fault is it if he will not pay the price? Are most of the big users afflicted with some chronic sort of refractomania, which prevents them from following a sound policy in the purchase of this particular class of supplies? Are most of them so lacking in coordination between the purchase office and the production and accounting departments that they pay no attention to the effect of the quality of refractories on the cost of a ton of steel or whatever their product may be, or is it possible that they are doing the best they can with the information available?

Why Are Cheaper Brick Bought?

Is the real trouble the lack of a market for really superior refractories, or difficulty in getting better prices for the common run of refractories. Suppose a purchasing agent does buy the cheapest one of a number of good brands of fire brick rather than the best. Perhaps it is poor economy to do that, but if so, why does he do it? Is it simply that the purchasing agent is unduly zealous in the matter of making a record, or is it a part of a definite policy of his company? What might you or I do in his place? A number of brands of brick are available, any one of which is known to be suitable for a given purpose. There is a considerable difference in price between what we may term the aristocrats of the lot and some of the more lowly ones. No useful facts are available for the guidance of the purchasing agent in evaluating these brands except their general reputations and the records of the production departments; and it has been demonstrated that it is next to impossible to make accurate comparisons of the service of similar kinds of fire brick because of the irregularities and the accidental features of service conditions. What is the reasonable thing for the purchasing agent to do? Can you blame him very much if he solves his problem by driving as hard a bargain as he can and buying that one of a number of suitable brands which he can buy for the least money?

The User's Position

In taking advantage of low prices, a user faces the prospect that he may run into difficulties from variations in quality, from bad workmanship and various defects that he might not encounter to the same extent if he were to purchase from a company which maintains higher standards in these things as well as in price. This does not necessarily follow, however, and the user may feel that he can afford to take the chance, safeguarding himself meanwhile by a rigid system of inspection and testing. Isn't this a fairly reasonable explanation of the procedure followed by some of the consumers and isn't it possible that they are getting away with it to the disadvantage of the refractories industry? Isn't it just possible that the whole industry is suffering from the effects of the secrecy about brands? If the manufacturer who is selling his product at a comparatively low price, had definite figures to show that his brand of brick is as good as he thinks it is—knows it is, possibly, then he might have the nerve to hold out for a decent price and get it. Henry Ford is credited with saying "Never lock up your engineering department—you may lock out more than you lock in." It seems worth while to consider whether manufacturers do not lose more than they gain when they keep some of their information confidential.

Consumers Looking for Information

At the Bureau of Standards, we know from the inquiries that we receive, that consumers are eager for information about the qualities of different brands of brick. We do not give it to them because it is confidential information and to that extent we help to keep men in ignorance who are eager for facts. There are two things that in normal times keep the prices of refractories down—the law of supply and demand, and ignorance. Users refuse to pay a premium for superior quality simply because they have no way of knowing they are going to get it. They may not even know when they do get it.

Now the law of supply and demand is something difficult to overcome, but the other factor can be controlled and if producers could overcome their inherent bashfulness about brands it would speed up the process of education amazingly.

Manufacturers Should Work With Bureau

We feel, at the Bureau of Standards, that this is a time when the refractories manufacturers and the bureau can be of unusual service to each other and to the consuming industries. By joint effort, yardsticks can be provided for measuring the properties and indirectly determining the values, at least relatively, of the different grades of refractories. We have been paying a great deal of attention to the higher grades and possibly losing sight of the valuable properties of the less refractory grades. Here again is an opportunity for the elimination of waste by promoting, by educational methods, an appreciation of the superior qualities of what we are making and selling as second quality brick. It is wasteful to use brick made from our highly refractory clays where less refractory brick would give better service, and it is only by educational methods that the advantages of the special qualities of the grades that are not highly refractory can be capitalized.

Good Specifications Highly Desirable

Specifications are coming into use—willy nilly, and we believe that the work of the bureau, in cooperation with such men as have been coming together from both the producing and consuming industries, will prevent, to a considerable extent, the adoption of bad ones, that would cause, rather than prevent, waste. Good specifications, on the other hand, give much promise of a beneficial effect on the whole refractories situation.

There is one thing that we particularly want you all to know about. We have, in the Bureau of Standards, not only the laboratory equipment for research work, but the greatest body of trained investigators in the whole world. We want you to know that the cooperation of every part of this institution is available for consultation on any special problems that you may have. More than that, the equipment, especially that of our ceramic laboratories, is available in case any of you should wish at any time to do experimental work which would require the temporary use of special furnaces or other laboratory equipment which you do not have. Manufacturers occasionally avail themselves of this privilege and it would probably be done more frequently if manufacturers more generally realized that it could be done. The bureau is meant to be and is, at your service.

* * *

BUILDING OFFICIALS HEAR SOME OF INDUSTRY'S LEADERS

A resolution favoring the passage by the states of legislation which would require persons who engage in the design or construction of buildings to be an architect, engineer or superintendent of construction of recognized standing was passed at the last session of the Building Officials' Conference in Indianapolis recently. The conference drew city building officials from various parts of the United States. The resolution was the result of a discussion of the Knickerbocker Theater disaster in Washington some time ago.

The conference also went on record as favoring the passage in cities and towns for chimney construction as approved by the National Board of Fire Underwriters because of the large proportion of fires caused by defective chimneys. The conference approved the "ideal wall" construction for one and two-story houses.

The brick industry came in for its share in an address by William Carver, of Cleveland, O., who talked on "The Actual Strength of Brickwork and Its Relation to Code Allowances." He said the unit test for brick did not give an accurate report of the strength of the finished wall.

A form for an ordinance regulating the manufacture and use of concrete blocks in the larger cities was recommended by A. J. R. Curtis, of Chicago, manager of the cement products bureau of the Portland Cement Association.

* * *

C. B. M. A. MOVES OFFICES

The Common Brick Manufacturers' Association of America will move from present quarters in the Schofield building to the new Cleveland Discount Building, according to an announcement by Secretary-Manager Ralph P. Stoddard. The Discount Building is one of the finest office structures in the country and has only been open for about six months. The move will be made prior to June 1.

* * *

LOCKWOOD HOUSING BILLS PASSED

Eight of the nine Lockwood housing bills have been signed by Governor Miller of New York. The unapproved bill relates to the return of jury fees in certain rent actions, and is not considered of as much importance as the others. A great amount of residential construction is expected as the result of these laws.

* * *

TWO NEW INTERESTING BOOKS

John Wiley & Sons, Inc., 432 Fourth Ave., New York City, have recently published two books of interest to the clay products manufacturer. A book called "Farm Buildings," by W. A. Foster and Deane G. Carter, covers all the present practices of modern farm building construction, treating of the location, planning, construction and repair of farm buildings. It represents the latest practice in farm buildings.

"Materials of Construction—Their Manufacture and Properties," by Adelbert P. Mills and Harrison W. Hayward, which has been on the market for some time, has recently been revised and augmented.

The picture shows the Fourth Annual "Own Your Home" Exposition held in New York April 22 to April 30. That the exhibit was successful is indicated by the attitude of exhibitors as well as the record attendance. The number of people estimated to have viewed the show is over 100,000. The Beautiful Home Convenient was perhaps the most talked of feature of the exposition and attracted tremendous attention. Exhibitors reported a large amount of business transacted and a big impetus was given home building by the show.

WHY STORED COAL WILL BURN

Under ordinary conditions the ignition temperature of a fuel is less important than the maintenance of combustion. No matter how large the mass of fuel may be, whether it is in blast furnace, under a boiler, or in an ordinary household furnace, the origin of the heat necessary to raise this fuel to the ignition temperature is in the kindling which starts the fire. Hence the starting of an ordinary fire is a process depending upon the application of an outside source of heat, always at a high temperature, to some portion of the mass of coal until a part of the coal itself burns and propagates heat to the remainder.

It is, however, in connection with the storing of coal in piles that the ignition temperature takes on a real significance. Coal is actually burning at all times and even at low temperatures. If the heat thus produced is sufficiently confined and air is supplied to the coal at the proper rate the temperature of the interior of the mass will rise. As the temperature rises the rate of combustion also rises and after a certain safe temperature is passed the process goes on quite rapidly until burning or flame results. Bulletin No. 128 of the Engineering Experiment Station of the University of Illinois, "The Ignition Temperature of Coal" by R. W. Arms makes a study of this problem with the object of determining the influence of the temperature of ignition of the various coals upon the liability to fire while in storage. In this bulletin is given a discussion of what point may actually be designated as the ignition temperature and what factors influence that point, the methods for determining the ignition temperature of different coals, and the results of tests upon the various coals used in this investigation.

Copies of Bulletin No. 128 may be had without charge by addressing the Engineering Experiment Station, Urbana, Illinois.

* * *

English Manufacturers Proposal to "Keep Brick in Front"

IN DARWIN'S THEORY, "Survival of the Fittest," the fittest is he who can and does put up the strongest fight. The meek and the submissive as well as the slothful and apathetic will fall by the wayside and perish in the struggle for existence and supremacy.

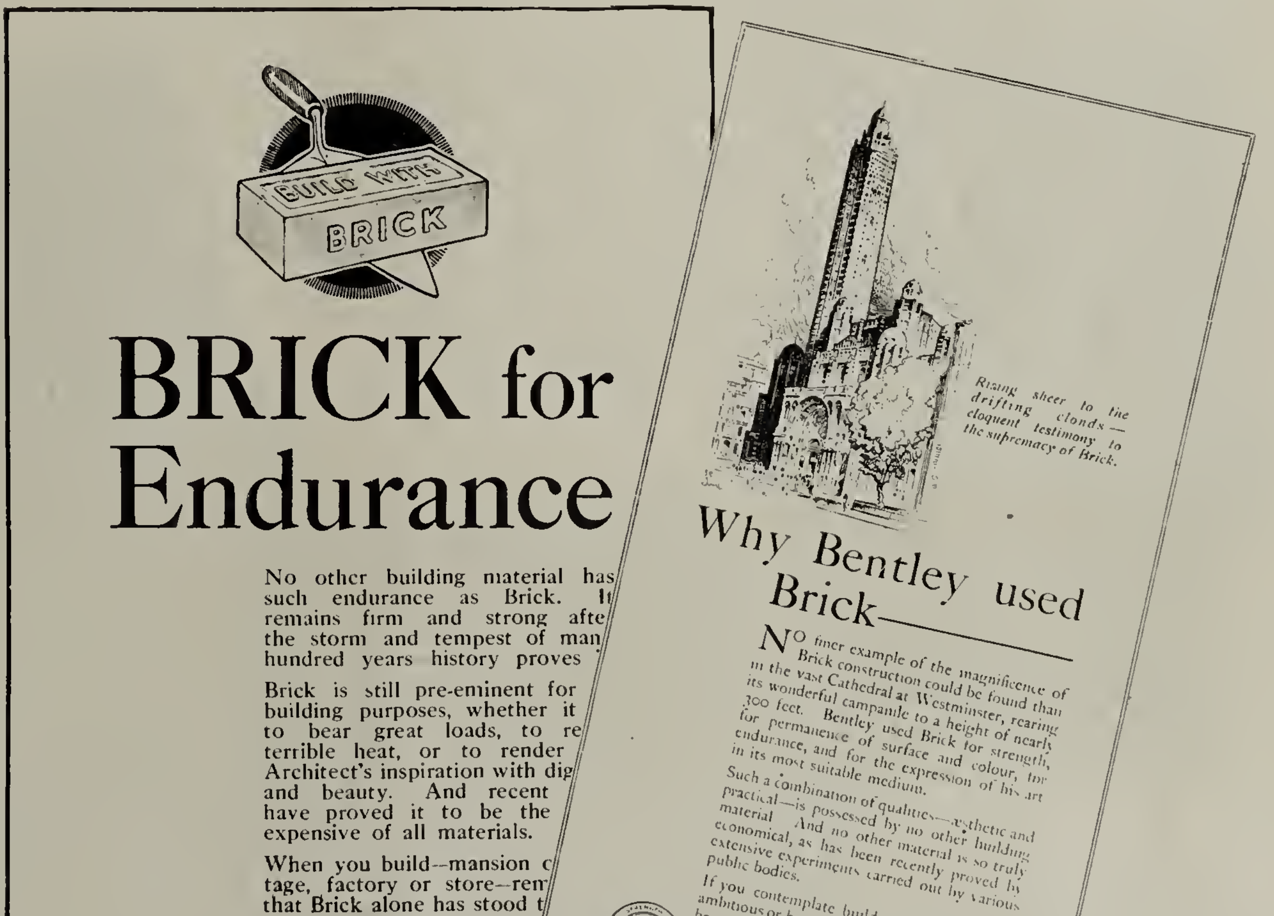
No theory could be more applicable to business, has been proven to be so absolutely true, especially in business, as this one. This is very clearly proven in the case of brick. Brick is practically as old as man and yet because of continued apathy on the part of the brick manufacturer it was relegated to a place below its rightful station and for a time its very existence was even threatened. Brick was being more and more supplanted and displaced by substitute materials who were "fighters" and who realized the necessity of being wide awake at all times. This was the situation in this country several years ago before manufacturers organized and inaugurated a cooperative advertising campaign. Since then brick has ceased to slide back and is rapidly gaining a foothold on a higher plane than it has ever held.

English Brick Is Not Advertised

Brick manufacturers in England are now confronting the same difficulties that American manufacturers had to face a number of years ago. In England as in the United States certain cement manufacturers have combined for selling and manufacturing purposes, and by every form of propaganda are pushing their products. Cement, concrete block, reinforced concrete, artificial stone, and so forth are constantly forced upon the attention of architects, builders, contractors and housing committees thruout the United Kingdom.

Materials designed to replace brick did intensive advertising of an educational nature, showing the consumer how the material should be used, when it was possible to use it and why it should be used.

Progressive brick manufacturers in Great Britain have awakened to the fact that they must begin an organized campaign of advertising to combat the influence of encroaching materials, or be satisfied to see these substitutes gradually increase their scope and use at the expense of brick. With this prospect before them the Publicity Committee of the National Building and Engineering Brick Federation in its report to the Federation


BUILD WITH BRICK

BRICK for Endurance

No other building material has such endurance as Brick. It remains firm and strong afte the storm and tempest of man hundred years history proves

Brick is still pre-eminent for building purposes, whether it to bear great loads, to re terrible heat, or to render Architect's inspiration with dig and beauty. And recent have proved it to be the expensive of all materials.

When you build—mansion c tage, factory or store—rem that Brick alone has stood t of six thousand years.

ISSUED BY THE BRITISH BRICK AS

Ask your Architec

Rising sheer to the drifting clouds — the eloquent testimony to the supremacy of Brick.

Why Bentley used Brick—

NO finer example of the magnificence of Brick construction could be found than in the vast Cathedral at Westminster, rearing its wonderful campanile to a height of nearly 300 feet. Bentley used Brick for strength, for permanence of surface and colour, for endurance, and for the expression of his art in its most suitable medium.

Such a combination of qualities—æsthetic and practical—is possessed by no other building material. And no other material is so truly economical, as has been recently proved by extensive experiments carried out by various public bodies.

If you contemplate building, no matter how ambitious or how unpretentious your purpose, be assured that the best material that you can use is Brick. It has successfully survived the test of six thousand years.

Issued by the British Brick Association

BUILD WITH BRICK.

Specimen Advertisement of a Type with Which It Is Proposed to Promote Brick Thru the Press in England.

strongly advocated that a cooperative campaign be started at once and outlined a campaign which it was believed would get results.

Six Points of Publicity Campaign

To be effective to the fullest possible extent it was decided that the publicity campaign should embrace—

(a) A preliminary campaign among brick makers thruout the country for the purpose of arousing their interest and cooperation and obtaining the necessary funds.

(b) Insertion in the daily press at short regular intervals of carefully considered and smartly gotten up attractive advertisements in favor of brick as building material.

(c) Advertising in the local government, architectural, building and engineering papers.

(d) A series of well written and interesting articles and paragraphs appearing in the press from time to time written by experts.

(e) A brochure on brick well written, and illustrated dealing with its history, types, qualities, manufacturing processes and technical data, and forming a standard book on the subject for sale or distribution.

(f) Formation of an Intelligence and Service Bureau which would keep in touch with all movements or bodies likely to influence the selection of building material, prepare and issue information, technical data and special articles to prospective builders, architects, the press and the public, interview housing and town planning authorities, arrange lectures and debates, and generally supervise and push the publicity campaign.

To Tax Manufacturers Sixpence Per M

As can readily be seen, a campaign such as outlined, would involve the expenditure of a considerable sum of money. It has been estimated, however, that sixpence per thousand on the aggregate sales for the next two years will raise it. It is believed that with the present average selling price of brick there is an annual turnover of building brick in the United Kingdom of approximately eight million pounds per annum. If brick manufacturers generally would combine in support of a well organized publicity scheme, the publicity committee estimated that a levy of one-half of one per cent. would enable such a publicity campaign to be conducted as would create a greater demand for brick and fully protect the industry from the attempts of its rivals to supersede it.

Advertising in the daily press has already begun and it is hoped that it will be possible to carry out the campaign in its entirety.

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GIVE RATE CONTROL BACK TO STATE

The Illinois Commerce Commission recently regained control of intrastate rates in Illinois when the interstate commerce commission rescinded its order in the Illinois intrastate rate case. The rescinding of this order authorizes the railroads to bring their intrastate rates to the level of interstate rates. The Illinois commission had previously set aside its order prescribing intrastate rates lower than those authorized by the federal commission. The increased intrastate rates prescribed by the interstate commerce commission, however, will continue in effect as the lawfully established and applicable intrastate rates and charges unless and until changed by further affirmative order of a competent authority.

⁂

DISTRIBUTES BRICK TO STATES

The Bureau of Public Roads, U. S. Department of Agriculture, is distributing brick and tools suitable for highway construction to the various states. This material represents part of the war surplus, and is allotted to the states on the same basis as monetary federal aid for road construction.

"All About Brick and 'Why'" Is the Title of the Brochure on Brick Which English Brick Manufacturers Hope to Publish. It Deals with the History, Types Qualities, Manufacturing Processes and Technical Data of Brick, Forming a Standard Book on the Subject for Sale or Distribution

The Titles of These Booklets Explain the Nature of Their Contents. They Are Links in the Chain of Advertising and Publicity with Which the English Manufacturers Propose to Increase Sales. They Will Be the First Booklets of This Kind on Brick in England.

Current Prices of Common Building Brick Six Inch Drain Tile and Hollow Building Tile

THIS PRICE LIST has not been published since February, and since then a good number of changes have occurred. The price of common brick in 28 of the cities listed below has been revised downward, while seven cities show a gain in price. According to the list, New Orleans, La., now has the lowest common brick price. A manufacturer there quotes $10, but a competitor in that city is asking $13. Changes for the most part were not great, either downward or upward. Altho the number of changes downward are considerably in excess of those that advanced in price, there seems to be a general stiffening of price, and it would not be surprising to see present price; hold.

Of the cities reporting drain tile prices, two have advanced since February, and ten have reduced their prices. The most notable reduction is that of Providence, R. I., where the price receded ten cents.

Hollow tile showed a gain in price in eight cities, while 13 further reduced prices on this commodity. The biggest reduction in this commodity came in Miami and St. Petersburg, Fla., where the price came down from $135 and $120 respectively to $95.

	Common Brick Per M	Drain Tile (6″) Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.		.15	
Boston, Mass.	17.00	**.2025**	
Providence, R. I.	**26.00**	**.20**	
Hartford, Conn.	16.00	**.14**	
New Haven, Conn.	21.00	.125	
New York City	20.00	....	117.90
Albany, N. Y.	20.00	.155	200.00
Utica, N. Y.	18.00	**.10475**	
Syracuse, N. Y.	18.00	.125	
Oswego, N. Y.	**25.00**	....	
Binghamton, N. Y.	**16.00**	.105	
Elmira, N. Y.	**25.00**	....	
Rochester, N. Y.	16.50	**.11**	
Buffalo, N. Y.	**18.00**	.12	**65.00**
Jamestown, N. Y.	25.00	....	110.00
Allentown, Pa.	20.00	....	
Erie, Pa.	23.00	.095	70.00
Philadelphia, Pa.	17.00	....	
Reading, Pa.	**19.00**	....	
Pittsburgh, Pa.	16.00	.12	**83.00**
Scranton, Pa.	**20.00**	.14	
Newark, N. J.	**20.50**	.1675	100.00
Paterson, N. J.	19.00	.17	
Trenton, N. J.	17.00	....	
Wilmington, Del.	22.00	....	
Washington, D. C.	19.00	**.10**	
Baltimore, Md.	**19.00**	.14	
Norfolk, Va.	16.00	.12	
Richmond, Va.	16.00	**.12**	
Huntington, W. Va.	15.00	.12	75.00
Fairmont, W. Va.	**24.00**	**.095**	75.00
Wheeling, W. Va.	**20.00**	.09	65.00
Atlanta, Ga.	12.35	.11	
Miami, Fla.	....	....	**95.00**
Tampa, Fla.	**15.00**	....	120.00
Louisville, Ky.	18.00	....	79.00
St. Petersburg, Fla.	17.00	....	**95.00**
Lexington, Ky.	19.00	.11	80.00*
Memphis, Tenn.	**13.50**	.09	**75.00**
Nashville, Tenn.	15.00	**.11**	**96.60**
Birmingham, Ala.	**15.50**	....	**67.40**
New Orleans, La.	**10.00**	.12	
El Paso, Tex.	16.00	....	**81.00**
Houston, Tex.	**18.50**	**.16**	**87.00@**
Dallas, Tex.	**11.15***	.20	**75.00**
Little Rock, Ark.	12.50*	.15	
Oklahoma City, Okla.	**14.75**	**.055‡**	**85.00**
Cincinnati, Ohio	**16.00***	.09	68.00
Cleveland, Ohio	14.00	.07	**55.00**
Columbus, Ohio	....	.08	
Toledo, Ohio	**16.00**	.075	**75.00**
Detroit, Mich.	**16.00**	.12	**90.00**
Evansville, Ind.	14.00	.04	55.00
Fort Wayne, Ind.	**17.00**	.07	**70.00**
Indianapolis, Ind.	**16.00**	.10	67.50
South Bend, Ind.	19.00	.04	**100.00**
Terre Haute, Ind.	**15.00**	....	
Bloomington, Ill.	**18.00**	.09	75.00
Chicago, Ill.	12.00	.10	**75.00**
Moline, Ill.	18.00	.11	**65.00**
Peoria, Ill.	14.00	**.11**	49.00
Green Bay, Wis.	14.00	.08	85.00
Milwaukee, Wis.	14.50	.09	80.00
St. Paul, Minn.	**16.00**	.09	75.50
Davenport, Iowa	17.50	.11	
Des Moines, Iowa	**20.00**	**.12**	**75.00**
Sioux City, Iowa	**16.50**	....	**72.50**
Kansas City, Mo.	22.00	.0625	
St. Louis, Mo.	14.00	**.13**	**65.00**
Lincoln, Neb.	**15.50**	**.09**	**70.00**
Denver, Colo.	**12.00**	....	85.50
Butte, Mont.	**17.00**	....	15.00§
Los Angeles, Calif.	....	.0975*	100.00§
San Diego, Calif.	19.00	.14	120.00
San Francisco, Calif.	17.00	.065	112.00
Portland, Ore.	**17.50**	.10	95.00
Seattle, Wash.	**16.00**	**.09**	110.00
Cheyene, Wyo.	**20.00**	....	
Winnipeg, Man.	18.00	.15	105.00
Toronto, Ont.	18.00	.11	
Halifax, N. S.	**21.50**	....	
Quebec, P. Q.	**16.00†**	.115	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, **Building Supply News**, and are sent to this paper by dealers in the various cities listed. **Brick and Clay Record** will appreciate any corrections. The prices marked in heavy type denote changes from last list.

*Little Rock, Cincinnati, Los Angeles, Atlanta, Lexington Dallas, f. o. b. cars.

§Los Angeles, Heath tile; Butte, per ton at yard.

@Hollow tile, Houston, car loads.

†Quebec, common brick, f. o. b. sheds.

‡Drain tile, Oklahoma City, four inch.

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

A MODERN SANITARY WARE PLANT

POTTERY is the most ancient of the industrial arts, probably even the most ancient of industries. Quite conceivably, the first pre-historic man who shaped a crude vessel out of clay with his hands and baked it in the sun, laid the foundation of an industry that has developed continuously since that day, combining with it at a very early date in its growth an art that has played no small part in adding vastly to the world's store of beauty.

It was inevitable that in pottery, industry and art, utility and beauty should go hand in hand. Plastic clay in the fingers of a being endowed with imagination soon or late would begin to take on lines of beauty not at all necessary to the utilitarian purpose of the molded object, yet inseparable from it as the artist in the craftsman developed. In fact, we do not venture recklessly when we say that in pottery man gave not alone his first expression to a desire for better conditions of living, but also the first expression to an inborn desire to make life beautiful.

So intimately are utility and artistry blended in the products of the potter that until very modern times there had been less of the application of mechanical contrivances to pottery than, perhaps, to any other industry that had its beginning in the dim and mystic period antedating recorded history. The human hand, being most in touch with the human imagination for centuries was the sole tool used by the potter. Even the potter's wheel—still in use by the modern craftsman-artist—scarcely can be dignified by the term "machine" so primitive is it in its design and operation.

Combining Art and Utility

And when the student of today wishes to trace the growth of civilization back beyond recorded history he finds his most interesting and most dependable evidence in bits of pottery dug from long buried and long forgotten places of human habitation.

For the present purpose we are concerned more with the utility than with the art of pottery, tho keeping well in mind the desirableness of blending art with utility as far as we may without defeating in any degree the practical purposes for which the products of the modern craft are designed.

We come thus into the field of sanitary pottery, products designed, fashioned, and finished chiefly to conserve the health of humanity, but administering measurably to comfort as well, and playing no small part in paving the way to happiness. Notwithstanding the severe and often distinctly limited requirements placed before the designer of modern sanitary pottery products, we marvel at the very high degree of art that is blended with the restricted lines of utility and the exactness with which these designs are reproduced by the thousands and tens of thousands.

Clean and Airy Factory

And this brings us to the modern pottery, the complete flower from the seed planted by the first man who made a crude cup of clay to dip water from a near-by spring.

The new plant of the Mutual Potteries is the latest expression of modern engineering and mechanical genius applied to the quantity production of articles that have become a necessity in the modern home, hotel, office building, factory, shop, hospital, or, in fact, any building intended for human habitation or occupancy.

The new part of the plant stands as a compact group of four buildings each designed for its particular purpose and all combined to facilitate production and to maintain established standards both in design and quality.

The three-story building shown on an accompanying page is the main or manufacturing building. Each of the group of four buildings is more than 300 feet long. No opportunity was lost in design and construction for letting into the workrooms the greatest possible amount of daylight, and the system of ventilation thruout gives one the feeling of out-of-doors, whether one be visitor or worker. There is ample room everywhere, and the products move without confusion systematically from the raw clays in the basement bins of the manufacturing building to the assembling room and finally the shipping platform.

Mechanically Operated

Manual labor has been reduced to the minimum. Wherever practicable machinery takes the place of human hands and human discretion. Nothing is left to guesswork from the mixing and weighing of the clays to the final inspection before packing. Thruout the more than four acres of floor space in these new buildings there is no point at which the continuously moving products can become congested, no place where there is untidiness, no place where there is lack of abundant elbow-room.

The buildings are of brick, steel and concrete and were constructed in seven months by Stone & Webster, general contractors. Two other buildings were bought from the Trenton Potteries near by and these are used for warehouses, assembling and shipping.

Beginning at the clay bins in the lower part of the manufacturing building, the process of manufacture may be described methodically as follows: Some of the clays used in the body are clay brought from England. Other clays are gotten from Florida, Kentucky and Tennessee.

These materials consist of English china clay, English ball clay, flint rock and spar, a white crystal rock. These make up the body of the mixture, and the ingredients are carefully weighed out on automatic scales, then poured

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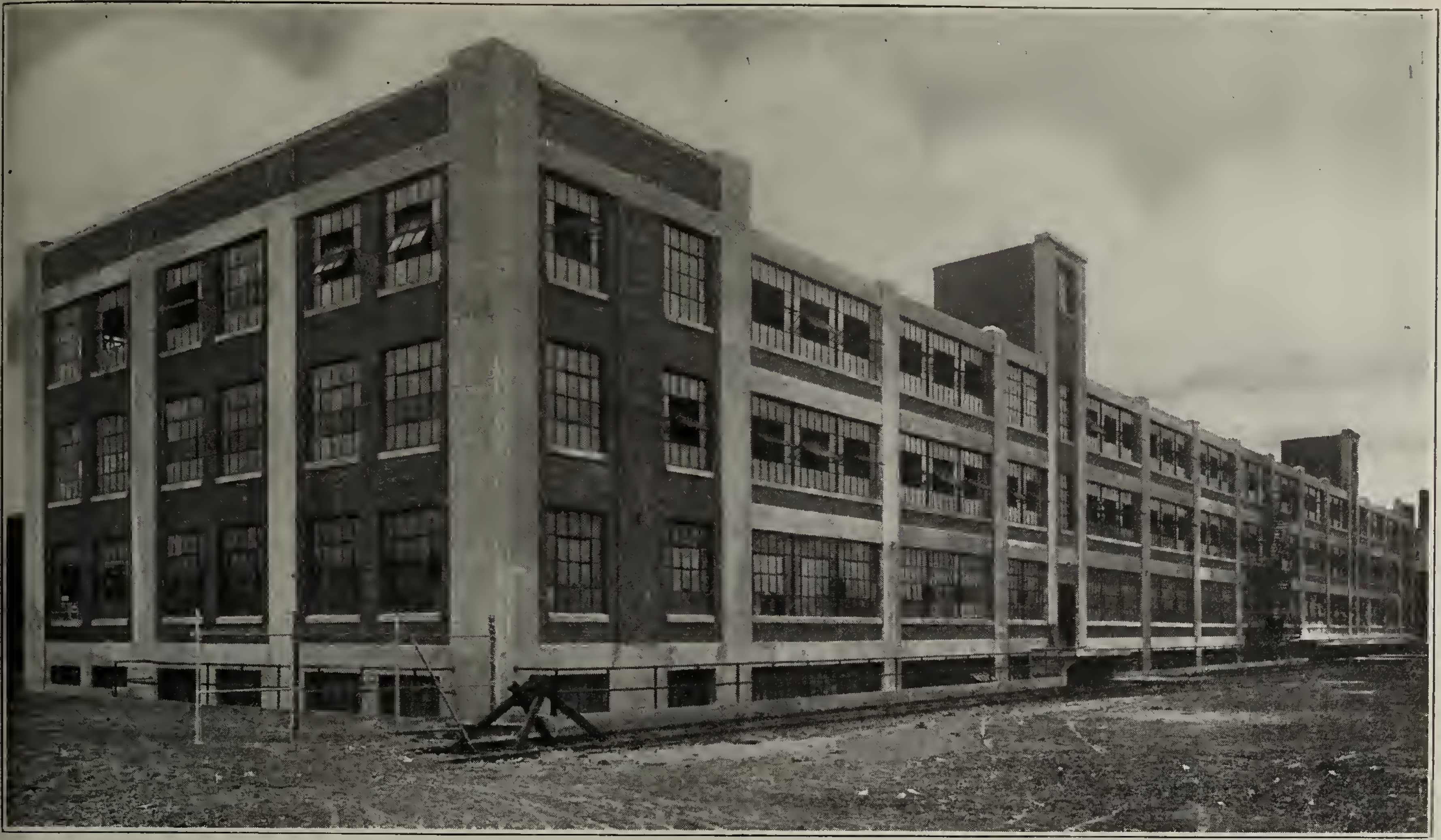
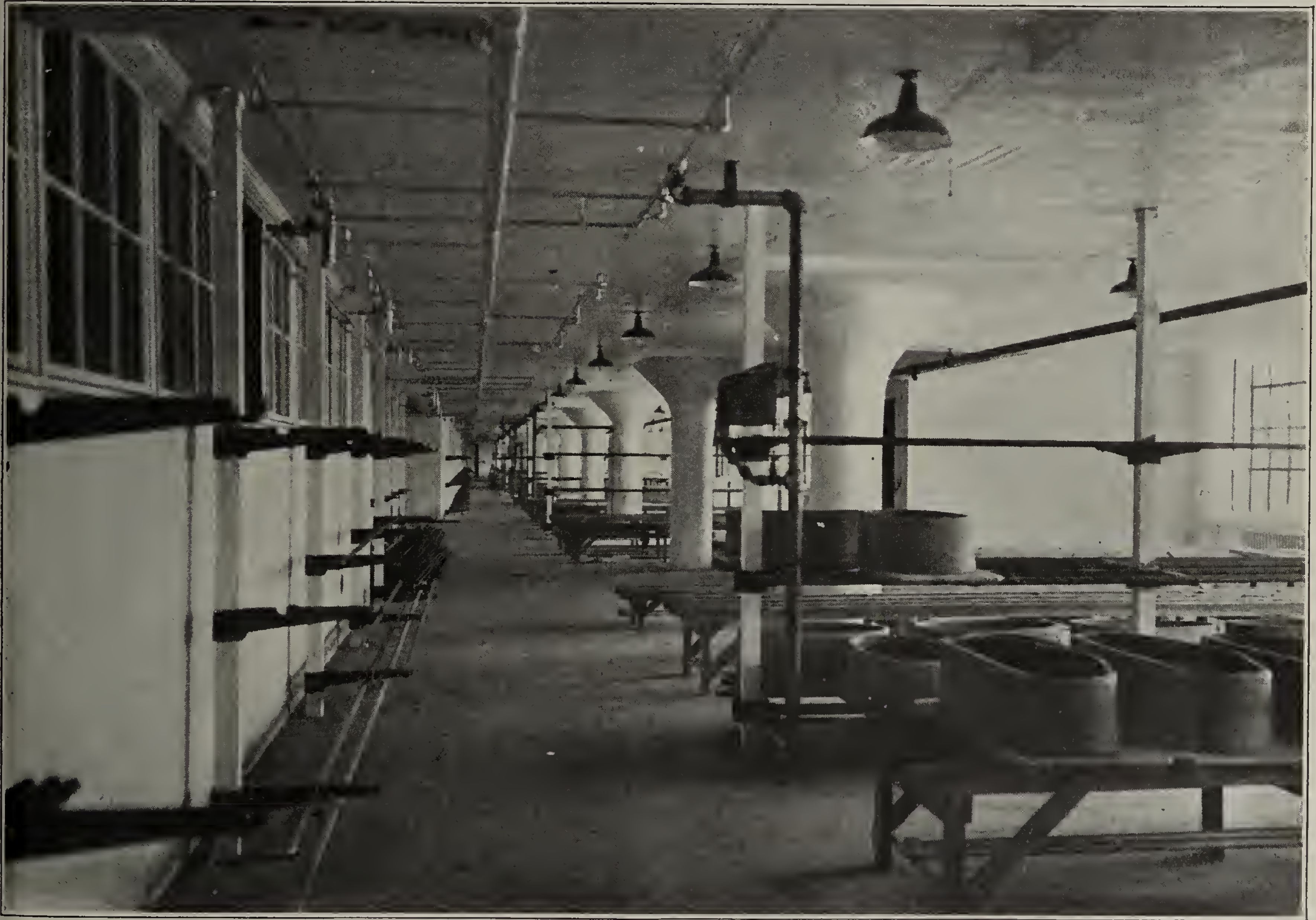
Editor's Note—Printed by permission of the Crane Co.



Manufacturing Building, Largest of Mutual Potteries Group.



Casting Department, First Floor.

Clay Mixing Machinery.

into large mixers called "blunger mills" and thoroly mixed in water.

The resulting mixture, a thick liquid known as "slip," is drawn off into large cisterns or vats, where it is stirred by large paddles to prevent separation and settling of the clays.

Magnets Take Out Iron

When needed for use the slip is pumped from the cisterns and passed thru a fine mesh screen to take out any large particles and impurities. The liquid is next run under very high-power electro-magnets where any particles of iron or similar substances are removed.

Second Floor Pressing Department.

From the sieves the slip is pumped into filter cloths, and the water pressed out by hydraulic presses, leaving the clay in large "leaves" about one inch thick and weighing from thirty-five to forty pounds each. These leaves are next stored in a clay cellar for a time and are then run thru a "pug-mill," which kneads the clay much as dough is kneaded for bread. This machine makes the clay compact and ready for making into ware.

Practically every piece of sanitary pottery is formed upon or in a mold. The molds are made of plaster of Paris, and these are in one piece or several pieces according to the shape and nature of the article to be formed.

When the article in the mold is sufficiently set it is placed on a potter's wheel and any inequalities or imperfections are removed by a skilled potter, and then the article is allowed to dry.

Bisque in Periodic Kilns

From this point the products pass to the bisque kiln building, next to the manufacturing building. There are nine periodic bisque kilns in this building, each eighteen feet in diameter and each having a capacity of approximately four hundred pieces of average size product.

Before being placed in the kilns for firing the bisque (or "biscuit" in the shop vernacular) is sealed in a sagger—a clay receptacle usually in two pieces which protects the bisque from the action of coal gases. In the Mutual Potteries the kilns are so placed that the workmen walk into them with the products to be fired on the level, there are no steps to be climbed.

When the kiln is filled it is sealed and the firing begins. Coal for the kilns is delivered by electric trucks from the pile in the yard. After a sufficient amount of heat has been applied at a given temperature, the kiln is allowed to cool, and then the products are removed and taken to the cleaning floor where they are rubbed perfectly smooth by hand preparatory to "dipping."

In the dipping room the articles are dipped into vats containing the proper mixture of "glaze" or "gloss." When this has dried so that the article may be handled the product reaches the most interesting and most modern part of the manufacturing process, the tunnel kiln.

Burn in Tunnel Kiln

This tunnel kiln has been built under the Dressler patents. It is of arched masonry, three hundred feet long and gives continuous firing to products at the temperature required for glazing. Heat is furnished by producer gas brought from the producer gas building and combustion is in hermetically sealed chambers so that none of the gas fumes can reach the products. For this reason no "saggers" are needed in the tunnel kiln. The articles to be fired are piled on small cars, each car carrying from twenty to twenty-four pieces. The kiln will hold forty-eight of these cars at one time. As one car goes in at the pre-heating end of the kiln a car of glazed product comes out at the other end. The cars are pushed along by an electric ram at the rate of about six feet an hour.

The chief advantages of this continuous-firing tunnel kiln are, automatic operation, maintenance of requisite tempera-

Periodic Kilns for Bisque Firing.

Gas Producers and Equipment.

ture, great saving in time and labor and uniformity in the finish of the fired product.

After glazing the products pass thru various processes of finishing and inspection until they reach the warehouse where they are ready for packing and shipping.

Electric drive is used for power thruout the Mutual Potteries. There is a complete fire alarm system and every part of the plant is well equipped with fire water-lines. There is a first aid room and abundance of lavatories and showers for the use of the workers. In short, no effort has been spared to make working conditions attractive and to provide incentives for the workers to develop efficiency to the highest point attainable.

Plant Produces Uniform Ware

The Mutual Potteries were designed to produce not only a high grade of sanitary porcelain-ware but to produce it of uniform quality day in and day out. For this reason the utmost care was taken both in design and installation to eliminate as far as possible chances for the application of guess-work or rule-of-thumb to any part of the various processes of manufacture. Automatic weighing and mixing is followed by the exact working of carefully adjusted automatic machines, and the temperatures in the kilns, both periodic and tunnel, are regulated and maintained by the latest electrically controlled devices.

The purpose of the Mutual Potteries is to take designs that have been worked out to secure the highest degree of sanitation, the greatest amount of comfort and the most beauty practicable, and from these designs to produce articles of uniform and dependable quality. It is intended that the mark of the Mutual Potteries shall be a guarantee not only of quality but of uniformity in quality. One article in any of the classes of products from these potteries shall be as nearly like all other articles in that class as it is possible to make it or them. The methods employed are in the nature of insurance to the buyer.

The plant was built and equipped for the purpose of supplying to Crane Co. exclusively the best sanitary pottery that can be produced, and to achieve this no expense has been spared. Crane Co. has a large financial interest in the company and takes the entire output.

The Mutual Potteries Co. was incorporated in April, 1920. Operations commenced in the Fall of 1921. The officers are: President, John A. Campbell; vice-president, Elzey S. Atkins; secretary and treasurer, Paul R. Berryman.

⁂

GOOD DEMAND FOR NORBELL POTTERY

Among recent developments in California is the establishment of the Norbell Clay Co. opening works in San Bernardino County. This is the result of the investigations that the Angelas Pottery Co. of Los Angeles has been making for the past three years. This company is manufacturing semi-porcelain and vitreous hotel and dinner ware and has at last found the fine grade of clay it has so long been looking for. A superior washing and grinding plant has been established, and the concern is having calls for goods from all over the United States, so it naturally feels that there is a future for the pottery industry in the state.

⁂

SHANGHAI SHIPS MOST CHINESE POTTERY

Pottery and earthenware shipments from Shanghai include from 35 to 45 per cent. of the total exports from China. Swatow and Kowloon are the next largest shippers. Smaller shipments are made from practically all the treaty ports of the country.

TO STANDARDIZE SEMI-PORCELAIN SHAPES

At a meeting of the Research Committee of the United States Potters' Association with department heads of the Bureau of Ceramics, United States Bureau of Mines at Washington, an agreeable arrangement was perfected whereby an immediate effort is to be made to standardize shapes in the semi-porcelain industry.

Standardizing vitreous shapes is a subject that has been under consideration by the Bureau of Ceramics at Washington for some months, and as a result some wonderful advances have been made a matter of record. It has been pointed out that to standardize semi-porcelain shapes will work to the benefit of this branch of the industry just the same as it has to the vitreous china section.

Standardizing semi-porcelain shapes is not beyond possibility, so members of the Research Committee of the Potters' Association say.

The Bureau of Standards is about ready to forward all semi-porcelain pottery manufacturers a list of requirements to proceed with this study, and the manufacturers will forward any stocks so needed for examples.

The joint session at Washington also formed the regular monthly meeting of the Research Committee. Since the committee was created at the last annual meeting of the Potters' Association in Washington last December the cooperation between it and the Washington Bureau has been most pronounced. No date has been assigned for the May meeting of the Research Committee.

* * *

BROTHERHOOD TO MEET IN JULY

The annual convention of the National Brotherhood of Operative Potters will be held in Atlantic City this year as usual, probably the first week in July. A referendum vote of the trade for national officers is now being cast. The various local unions affiliated with the Brotherhood are also electing delegates to the convention. Resolutions having to do with the proposed changes in the wage scale and internal affairs of the organization have been presented National Officers, but the latter will not make these known before the convention opens.

* * *

POTTERS MAY HOLD SUMMER MEETING

Probability exists that the United States Potters' Association will hold a summer meeting this year. President Frank P. Judge, secretary of the National China Co., Salineville, Ohio, is expected to take this subject matter up with the Executive Committee of the Association within the next few weeks.

* * *

FIND POTTERY CLAY NEAR PORTLAND

An unusually large deposit of a peculiar pottery clay has been discovered in the mountains of the Oregon Coast Range near Portland, by Peter Timm of Portland. The deposit is said to assay mostly aluminum and silica, and the natural deposits of it are not supposed to be plentiful.

* * *

INCREASING SANITARY WARE OUTPUT

The Standard Sanitary Mfg. Co., Pittsburgh, Pa., is arranging for an immediate advance of about 25 per cent. in production at its plant at Tiffin, Ohio. Fires will be started in four additional kilns at the plant. The company has adopted a night shift at the local shipping department. The working force in other branches of the plant will be increased.

EDWARD MENGE DIES

Edward Menge, former president of the National Brotherhood of Operative Potters, is dead at his home in East Liverpool. He was nationally known in the pottery industry.

Born in Wheeling, W. Va., August 29, 1871, Mr. Menge trained as a pottery worker at the bench until 1902 when he was selected national secretary of the brotherhood at the convention held in Wheeling. He remained in office as secretary for nine years.

During his administration Mr. Menge saw the brotherhood achieve its present strong position in national labor organizations, playing a leading part in all wage negotiations and other discussions between the craftsmen and the pottery manufacturers.

Potteries of the whole East Liverpool district closed down during his funeral.

* * *

FORM ARTS AND INDUSTRIES ASSOCIATION

A new organization known as the Association of Arts and Industries was recently formed, which is the amalgamation of two societies that were interested in the promotion of arts such as drawing, painting, sculpture, modeling, metal work, pottery decoration, and so forth.

Some of the prominent men of Chicago and Illinois are officers and directors. Among the directors are officers of such concerns as Deere & Co., Western Clock Co., Mandel Brothers, Meyercord Co., Tobey Furniture Co., Carson, Pirie, Scott & Co., Great Lakes Wall Paper Mills. Moreover, among the list of directors is none other than William D. Gates, president of the American Terra Cotta and Ceramic Co.

The offices of the Association of Arts and Industries are at 230 East Ohio Street, Chicago, and Norma K. Stahle is executive secretary.

* * *

CLAY COMPANY ISSUES $1,000,000 BONDS

The Miner Edgar Co., Newark, N. J., producer and distributor of high grade clays, has arranged for a bond issue of $1,000,000, to be used for general operations and financing. The company is expanding its business, and has net assets totaling over $6,300,000.

* * *

MINNESOTA GETS TILE COMPANY

The Peerless Mosaic Tile Co. of Pengilly, Minn., recently filed papers of incorporation with the secretary of state. The company will be capitalized at $50,000 to make tile, it is stated.

* * *

OPENS TILE WARE EXHIBITION

Thru the special committee of the Washington Chapter, American Institute of Architects, cooperating with the Associated Tile Manufacturers, citizens of Washington were invited to hear interesting illustrated addresses in the auditorium of the Cosmos Club on May 12. The evening also marked the opening of an exhibition of tiles and tile ware, which constitutes a comprehensive display of colors, patterns, sizes, glazes and finishes produced in this branch of the ceramic art.

* * *

MADDOCK WORKING ALMOST CAPACITY

The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary ware, is maintaining operations at close to 100 per cent. capacity at its plant. The company has sufficient orders on hand to insure this rate of production for some time to come.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

METHODS USED TO SQUARE BELT ENDS

Following the printing of an item in the Superintendent's Department describing a "kink for cutting belts," Brick and Clay Record has received a letter from the Crescent Belt Fastener Co. of New York taking exception to this item. The letter contains some good ideas and is reprinted herewith.

"On page 626 of your April 18 issue under the department headed "The Superintendent" there appears an article, "Kinks for Cutting Belts," to which, as a practical man and one very much interested in enabling belt users to get the maximum service from their belting, I must take the very strongest exception.

"Belting manufacturers, without exception, will tell you that the most important thing about a belt next to using the right belt for the job is to join it properly.

"The danger of cutting the ends of the belt in the way suggested is not alone in the diagonal joint which is apt to result but in the fact that a very slight variation from a straight line will produce a cut which will not abutt properly and which will throw the belt out of true.

"Any practical man handling belting knows the difficulty of cutting thru a belt of any size, and when you place one thickness on top of the other and attempt to do it, you increase the difficulty 200 per cent. immediately.

"Not only that, but a very slight shifting of the top thickness will produce a joint which will throw the belt off the pulleys with a very great chance of its catching in the hangers or in the side of the machinery and tearing it lengthwise.

"The diagonal joint in itself is always a hazard regardless of what material or method is used for joining the belt. The torsional strain of a bevelled joint riding onto, over and off the pulley will set up interior strains and stresses in the joining material and lead to a rapid destruction of the joint and this will be true in the case of any of the many types of metal fasteners commonly in use.

"It is surprising that some users of belting do not appreciate the tremendously high cost of belt joint failures and fail to pay attention to the proper squaring of their belts and proper joining.

"Squaring a belt properly is such a simple thing that a plant owner is justified in insisting that the job be done right, even tho it be done by the most lowly employe.

"If a square is used and held firmly against the edge of the belt until the knife blade has cut all the way thru, the ends of the belt will then butt tightly and evenly together and assure a join which will run even and true on the pulleys. Accompanying illustration Fig. 1 shows the correct method of doing this on all narrow belts.

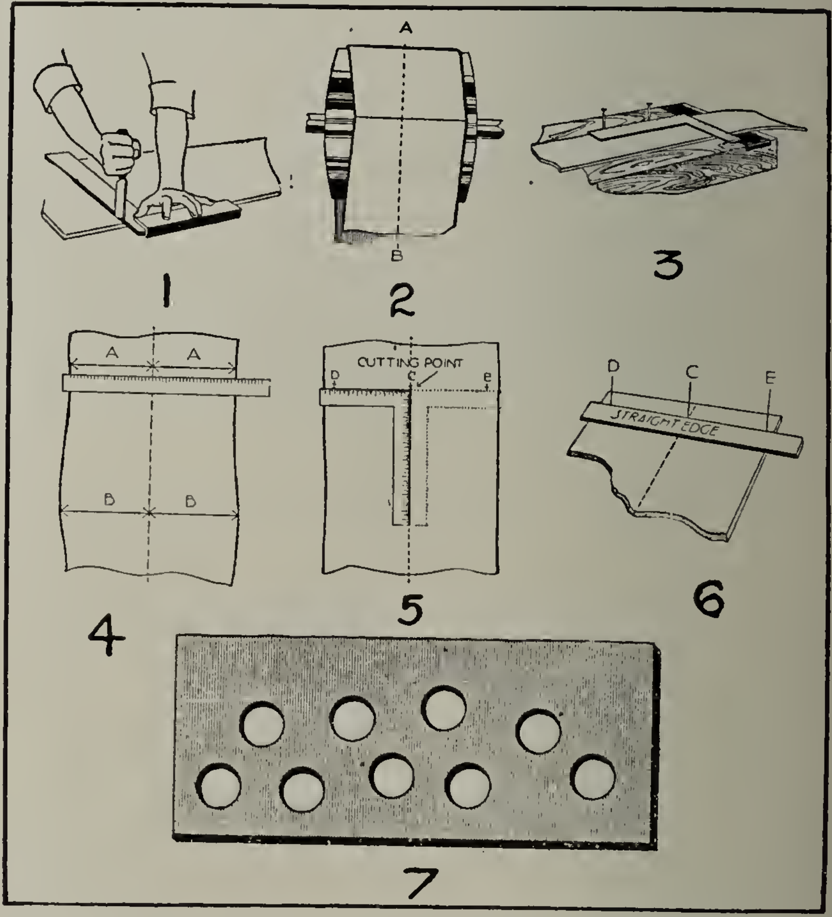
"A belt which is not so squared will come together in an uneven manner and result in a joint such as shown in Fig. 2, and a joint like this will literally do the 'shimmy' on the pulleys because the line of direct strain 'A-B' shifts from side to side, and it is obvious that a thrashing belt cannot give an even transmission of power or work to its best advantage.

"Fig. 3 shows an easy stunt for cutting belt ends square.

"For joining wide belts, the best known means is that shown in Figs. 4, 5 and 6. First, find the center of the belt by measuring in from the edges, as shown in 'A-A' and 'B-B.' Then draw a straight line connecting the two center points. Then the square can be placed against this center line and by working to right and to left, as shown in Fig. 5, the cutting line can be established.

"On very wide belts where the square will not reach all the way across, a straight edge can be used, simply striking thru two points as established at D and E in Fig. 5.

"Sometimes it is not easy to determine the exact point at which a wide belt should be cut until it has been drawn up tightly over the pulleys. In this case, one end should first be cut square by the method indicated. Then on the other end, and some distance back from where it would be cut, a similar squared line should be drawn and brought out to the extreme edges of the belt. This establishes a base line from which to measure forward. Then when the belt is put in the clamps and drawn up, a ruler can be run thru the clamps on this end, measuring forward to the cutting point on each side, and the belt then cut by the use of straight edge.



Seven Different Points in Proper Joining of Belt Ends. The Text Explains the Various Methods Illustrated.

"Above all things I would warn against the indiscriminate and careless use of the belt punch in joining. The punch always cuts out the lengthwise fibres and weakens the belt. Even in a very carefully done job the strength of the belt is easily reduced 25 per cent. or more by this method, while a little carelessness from the use of the punch as so frequently done and illustrated in Fig. 7, will often punch out an aggregate amount equal to 75 per cent. of the cross section of the belt at the joint.

"I sincerely trust that these suggestions may prove of assistance and value to the readers of Brick and Clay Record."

Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

DIFFICULTIES IN OPERATING DRY PRESS

On page 470 of the March 21 issue of Brick and Clay Record was published a question and answer pertaining to the difficulties a manufacturer was having with respect to making dry press brick. Since the publication of this item, we have received information from four men in the industry who have a thoro knowledge of dry press brick manufacture. This information is published following the question and answer, which is reprinted herewith.

1,035. *Montana—I have a four mold model dry press machine, which I have been trying to operate for six years, but till now have been unsuccessful. The trouble is that the brick split horizontally thru the middle when they come out of the molds. If, however, the machine is thrown out of gear when the pressure is on the brick, and the pressure held on the brick by the clutch for about two seconds, the brick will come out of the molds without a crack. I keep the air holes open in the pressure plates. I have cut down the speed to 10,000 capacity, and find no difference.*

Our clay is ground and screened thru a piano wire screen with 3/32 inch openings, and the clay is damp but not wet. This clay makes a good stiff mud brick with the exception that the brick shrink considerably in burning. I would also like to make a face brick.

Can dry press brick be made out of any kind of clay that will make a good stiff mud brick, provided other material is mixed with the clay?

From the description of your trouble with dry press brick we are almost positive that your difficulty lies in using too much pressure. The general rule or instructions for making dry press brick is to operate the press with all the pressure possible, without at the same time making the split brick that you speak of. In other words, if you reduce your pressure a small amount, we believe that you will have very good results. The pressure is regulated by moving the wheel which is directly beneath the delivery plate. A good dry press operator changes his pressure almost constantly during the day, at least four times an hour, depending on the uniformity of the run of clay and the moisture contained in it.

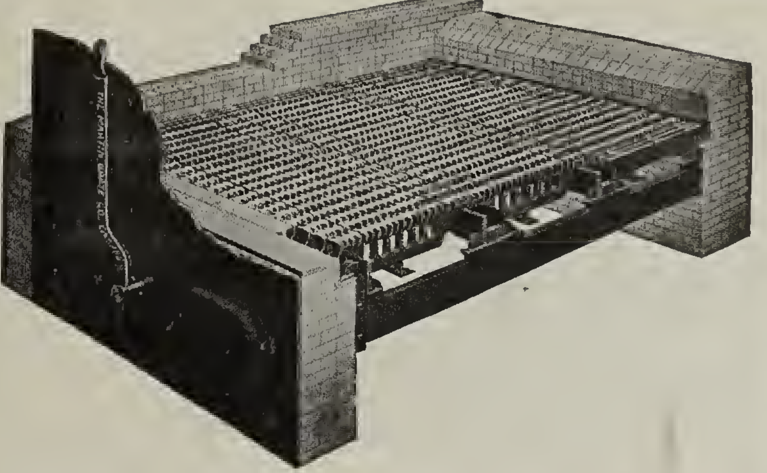
We believe that dry press brick can be made out of any clay that makes a successful stiff mud, if the clay is properly prepared before going into the machine. By this preparation we mean mixing of the proper amount of moisture. This percentage of moisture should be uniform in order to get the best results.

It is easier and there is less loss when making dry press using a plastic clay such as you have than when a non-plastic clay is used.

The following information is quoted from a letter received from Ellis Lovejoy, consulting engineer, who is an expert on brick manufacturing problems:

"The trouble is a common one familiar to all manufacturers of dry pressed brick, especially with a plastic clay.

"In the early days the trouble was universal in the hydraulic and toggle joint machines, due to the direct pressure and no



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Benefit of 20 years' experience.
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Adel Excavator

The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

S STEPHENS-ADAMSON MFG. CO. AURORA, ILLINOIS A

movement of the brick under pressure in the mold. In consequence the brick had weak, usually designated as granulated, centers. If the clay was plastic, and springy, the brick would split along the line of the weak center.

"An English machine introduced into this country in 1884, and the later machines of American make, gave variable pressures and moved the brick up and down in the mold under pressure, which partly overcame the trouble and partly smeared it over on the face. Even with the best of these machines we had trouble with a very springy clay, and the only way to overcome the trouble was by the addition of 'grog' or other non-plastic material. Your correspondent tried sharp sand without results, but probably did not use enough sand.

"I cannot agree with Brick and Clay Record in the statement in its first answer to your correspondent, that a plastic clay is better than a non-plastic one. Much depends upon the degree of plasticity. I have had all kinds of trouble with plastic clays, but none whatever with ground sand rock, flint fire clays, and other dead materials. We had continuous trouble with the plastic crop clay, and none with the hard clay from under the hill, both the same bed of clay.

"Witness the pressing of the sand-lime brick, flint fire clay, silica and magnesite brick, all dead materials. There is no trouble in pressing such materials but the difficulty comes in the burning.

"Your correspondent should run the press as slow as practical, then add grog or sand until the crack is overcome. The brick must be pressed hard enough to handle and to stand up under the load in the kiln, but if pressed excessively hard they will nearly always split. Experienced pressmen test the hardness with the finger nail and can adjust the pressure to the variations of the clay very closely.

"Plastic clays invariably are softer pressed than non-plastic materials, and this is one advantage of the non-plastic clays.

"The amount of moisture a clay should contain varies with the clay and the type of press. I used three types of machines and the rule was to have the clay damp enough that a handful of loose clay pressed together in the hand would hold its shape when lightly handled. If too dry it would crumble under the slightest touch and if too wet it would develop a plastic ball.

"Some presses, the hydraulic for instance, used the clay much dryer than this."

D. A. Moulton, at present with the Iowa State College, was formerly connected with several dry press fire brick manufacturers and from his experience he gives the following advice:

"I find the ideal clay for dry press is one which when ground balls together when squeezed in the hand without losing its shape when the pressure is removed, and yet which does not feel sticky or plastic. Highly plastic clays are hard to dry press and in general are not suited for working in dry state. An exception to this is found in making thin pieces of tile or insulation from plastic ball clays, but even these are found to have lamination.

"Lamination should be given more attention than has hitherto been given to it. It is due to defective design in presses and to the inclusion of air between the particles and irregular water content.

"This irregular water content is a very important factor and too much care to obtain a uniform distribution cannot be given in preparation. This is especially so of plastic clays as it is very difficult to get this uniform distribution. A steaming process is used at one plant and the stored clay after addition of water makes firmer and better green brick than the freshly steamed material. When used direct from the steamer, the clay does not work so well in the presses; it makes spongy brick that have a tendency to crack under pressure and to crumble on handling.

"In his case the air has great difficulty in getting out of center of brick due to density of top and bottom of brick and this with the action of the press causes a granulated center or lamination.

"If it is absolutely necessary to use the old press I would suggest that he use some of the clay in coarse particles, or if clay is all soft use some calcine clay or other non-plastic material in small quantities, as grog or calcine in large quantities does not, as a rule, make good dry press brick, as they do not develop as good a bond in burning.

"Your correspondent no doubt will get best results by obtaining a new improved machine which has a hesitation in the process of pressing, thus giving time for the air to escape and by moving both dies and brick while under pressure, has a tendency to break up the granulated center by this kneading motion."

Vice-president in charge of production, F. W. Miles, of the Hydraulic-Press Brick Co., world's largest producer of face brick, and a concern that has produced a great quantity of brick under the dry press process, gives his expert advice as follows:

"There are in our judgment three reasons for these brick splitting, any of which would cause this trouble. First: Insufficient taper in the mold boxes; second: Clay too damp; third: Bottom plunger starts up too fast.

"Taper in the mold boxes where damp clay is used should be 1/32 inch in six inches on the sides and the ends.

"The moisture in the clay should be between five and seven per cent., where clays have a tendency to split and should not exceed seven per cent.

"If the momentum of the bottom plunger can be controlled it should be made to start up slower after pressure has been completed.

"Your correspondent says when he throws the machine out of gear and throws the pressure on the clutch the brick does not split. This bears out our statement that the bottom plunger starts up too fast.

"The splitting of the brick is done when the bottom plunger starts its upward movement after the pressure is finished. When he throws the machine out of gear and then throws in the clutch, the machine does not start at full speed, as the clutch takes hold gradually and while the clutch is taking hold gradually, the bottom plunger starts the brick slowly and prevents the splitting.

"He also says that he has made brick from clay bone dry to mud and could not make satisfactory brick. We venture to say that when they were made out of bone dry clay they did not split, but were not satisfactory because they did not have good corners or edges and could not be handled without chipping on account of the clay being too dry.

"If he will give his mold boxes the proper taper and use from five to seven per cent. of moisture, he can put on pressure enough to make good brick without splitting them. Brick made with seven per cent. and less moisture will have to be handled very carefully to prevent chipping them.

"We wonder why he does not put his trouble up to the makers of his machine.

"In our experience we do not find all clays that will make good stiff mud brick will also make good dry press brick."

The famous "Bradford Reds" have been made according to the dry press process for many years, and it is from these many years of experience that W. L. Hanley, Jr., general manager of the Bradford Brick & Tile Co., writes the following information:

"As near as I can make out this manufacturer from Montana will have to keep some pressure on his clay in the press, as is evidenced by his experience by slipping the clutch when the brick was under pressure for two seconds. Our experience has been that it is better to put the brick under pressure more than an instant and in our new press the brick remain under pressure while on the up-travel, that is, the lower plunger and up-plunger move upward together, maintaining the brick under pressure during this travel of the cycle. This is different from the way most of the old presses worked for they simply maintained the pressure a very short time at the bottom of the stroke and released it before raising the brick. You can see that speeding up the press with one of the old type would not give the brick

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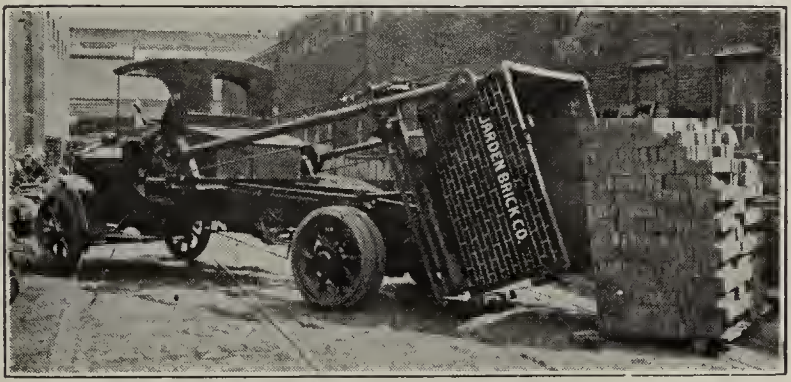

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any longer time under pressure, as it is only at one point of the cycle that you have the pressure and slowing the cycle would practically make no increase at this point of pressure.

"It strikes me that the only thing this man can do would be to speed up his press and try to have some arrangement for slipping the clutch at the point of pressure, or try to hold the pressure on the upward lift.

"Personally I do not believe either of these schemes can be worked out practically with one of these old presses and his most feasible way out is to buy a new press."

These four views or opinions are from the best sources obtainable, and the excellent spirit of cooperation given by these experts should prove of considerable value to this Montana subscriber. There are undoubtedly a great number of other manufacturers of dry press brick who will find the above information of considerable help to them. It is indeed a pleasure for Brick and Clay Record to act as the medium for this exchange of important practical information.

⁂

TROUBLED WITH WARPING

1,040. *Louisiana—We manufacture a side-cut stiff mud brick with a side-cut union machine and automatic cutter. The cutter cuts the brick straight but they warp in drying. When they dry and are laid on a flat surface the warp will equal about ⅛ of an inch. We use a very plastic clay. Altho we have used a short clay of peculiar consistency, that is, seeming to contain no sandy qualities, the same warp would occur in about the same degree. We have tried extending the die from the auger. This reduced lamination but did not help the warp.*

It seems, mechanically speaking, that the outside of the clay column has a tendency to flow faster than the part in the center. We figure this is the cause, for the dry brick are convex on side next to die and are concave on side away from die.

The auger of our machine is 11½ inches in diameter at end being a small machine with little taper. The die at the opening measures 8¼x3⅞ inches. At rear the die is about one inch larger each way.

The following solution to the difficulties outlined in the above question which appeared in the April 18 issue of Brick and Clay Record, was offered by R. K. Hursh of the University of Illinois ceramic department.

"From reading a description of the Louisiana brick manufacturer's troubles, I came to the conclusion that the taper in his die was too great, and would suggest that it be adjusted so that the dimensions at the rear are not more than one-half inch greater than at the outlet. Preferably, I should say that it should not be more than three-eighths inch greater. This smaller taper will permit a better regulated flow and should, I think, eliminate his trouble to some extent.

"A further means of preventing the warping might be by the use of cores to make a cored brick with, say, about three one-inch holes. This will tend to hold back the middle and to equalize the flow of clay thruout the cross section of the die.

"With one or both of these treatments conditions should improve. Some reduction of the plasticity of the clay by use of sand or grog might help, but I should try the suggested remedies first."

P. J. Laubscher of Fredericksburg, Ohio, has offered the following suggestion as a means of correcting this trouble.

"The troubles of this manufacturer are without a doubt in the die, and are manifested in the drying. It is very evident that the clay is of a dense and plastic nature ,and therefore a die which is tapered as much as that of your correspondent will make an outer shell much more dense than the center, being placed there horizontally by the action of the slickers, while the center of the column is being filled in spirally and cup-shaped, the large end of the cup shape filling toward the auger. This produces an outer band of very dense formation on the brick, and this with the kind of center heretofore mentioned, and the brick being piled on top of each other, in drying, will naturally compel the water in evaporation to be discharged along the lines of least resistance.

"I would suggest that your correspondent try a die with very little taper, one which is lined with thin sheet steel, something like the Niedergesaess, and lubricate it with oil."

The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

ARTICLE ON GEARS IS CRITICIZED

Herewith is reprinted a letter received from a party in Cleveland who takes issue with an article printed in the April 18 issue. The criticism is constructive, and we are glad to reprint it herewith.

"I was greatly interested in your article by G. H. Radebaugh published in the April 18 issue.

"In the second paragraph the writer states: 'Cast gears are used very much on clay plant machinery and they serve their purpose admirably well.'

"Further on the writer explains that cast gears are very apt to break. And a detailed explanation of how to repair them is given, the details bringing out the point that as a last resort the broken part may be taken to the local foundry.

"As a comparison of the 'high cost' of steel cut gears and the time consumed during a shut-down while the broken cast iron gears are being repaired and replaced, which do you believe is the cheapest in the long run?

"It seems to me that it is time the clay working industry should realize that inferior and cheap machinery is always inferior but seldom cheap. And if these plants kept an accurate record of production costs the operators would soon realize that it is real economy to purchase quality equipment and pay a higher price for it than constantly having to repair inferior equipment. And this applies especially to gears.

"I will be very glad to have your personal opinion on this matter."—M. E. Gammon.

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CREDIT TO THE WHEATLEY POTTERY

Through an oversight Brick and Clay Record omitted mention of the Wheatley Pottery of Cincinnati, Ohio, in the article in the May 2 issue entitled "American Pottery." We have received the following letter calling attention to this omission from I. Kahn, president of the Wheatley Pottery:

"For your information we wish to tell you that the Wheatley Pottery was established in Cincinnati in 1879 and it ranks as one of the oldest art potteries in the United States.

"Thomas Jefferson Wheatley secured letters patent on the process of painting in under-glaze on pottery.

"In justice to Mr. Wheatley personally and to this company, we feel that proper recognition should be given in your article as published in the May 2 issue.

"The writer has the certificate of patent before him, and the number of the patent is $232,791."

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PAGEANT OF PROGRESS STARTS JULY 29

Chicago's Pageant of Progress, inaugurated in 1921, and which will be an annual occurrence, will this year be held at the Municipal Pier from July 29 to August 14. The Pageant offers every conceivable industry an opportunity to exhibit its products to the public. The exhibition last year attracted almost a million visitors, and it is expected that this amount will be surpassed this year. Anyone who is interested in exhibiting at the Pageant of Progress can get complete information from Dr. C. St. Clair Drake, 7 W. Madison Street, Chicago.

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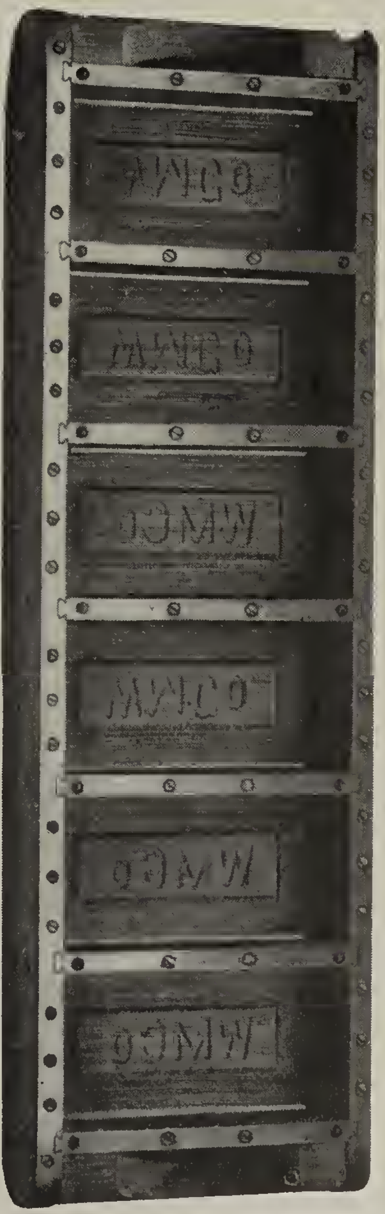

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In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

H. R. MEARS STRICKEN WITH DEATH

The sudden death of H. R. Mears, manager of the Bloomsburg (Pa.) Brick Co., came as a distinct shock to his many friends in the industry. Death came as the result of complications that followed a carbuncle.

Mr. Mears had a long and active career in the town of Bloomsburg and was one of its best liked and most highly respected citizens. In 1909 he helped to organize the Bloomsburg Brick Co. and since then played a prominent part in the affairs of that company and in the clay industry. Mr. Mears for a number of years was one of the staunchest association men in the Eastern Red Division of the American Face Brick Association. For the past two years he also was a member of the board of directors of the A. F. B. A.

DEATH TAKES S. R. FREW

Samuel R. Frew, aged 44, a large stockholder in the Ludowici-Celadon Co., of New Lexington, Ohio, manufacturer of tile, died at Grant Hospital, Columbus, recently, following an operation for carbuncle. He was also a part owner of the Mid-Hocking Coal Co. He has been a prominent clay products manufacturer for years.

MR. AND MRS. STILLMAN TOURING COUNTRY

Mr. and Mrs. L. B. Stillman recently dropped into the office of Brick and Clay Record while stopping briefly in Chicago preparatory to continuing their tour of the country. They had just returned from the West Coast, where they went immediately following the C. B. M. A. convention in St. Louis. They expect to go south before returning home. Mr. Stillman is president of the Saco (Me.) Brick Co.

MRS. C. C. CARHART SELLS INTERESTS

Mrs. Charles C. Carhart has sold her interests in the Sheffield (Ia.) Brick & Tile Co. and the Sheffield Tile Co. to H. L., Ralph R. and Forrest F. Carhart. The consideration is said to be close to $200,000.

CITY CLUB ELECTS H. E. STRINGER HEAD

Henry E. Stringer, manager of the Washington, D. C. branch of the Hydraulic-Press Brick Co., will be the next president of the City Club as a result of the withdrawal of the other nominee for the office.

RESIGNS JOB AS SUPERINTENDENT

T. A. Kleinfelter, superintendent of the plant of the Atlantic Terra Cotta Co., Tottenville, S. I., has resigned, effective May 1, to become general manager at the pottery plant of the J. L. Mott Co., Trenton, N. J. He will be succeeded at the Tottenville plant by Frederick Parsons, heretofore foreman of the pressing shop. Joseph Morrell has been advanced to act in the latter capacity in the future.

LOS ANGELES SELLING MORE BRICK THAN EVER

Building in Los Angeles is going ahead at a faster pace than ever, says L. S. Collins of the Los Angeles Brick Co. "Never in the history of our city has the monthly consumption of brick been what it has been in the past few months, and it is increasing every month. This year will be the banner year for building in this city."

CALIFORNIA POTTERY BUILDING NEW KILNS

Frank A. Costello has been re-elected president of the California Pottery Co., which has its plant at Merced. E. A. Forde was promoted to the office of vice-president. F. B. Fancher has been been chosen treasurer. These with J. R. Flynn and E. R. Hoercher constitute the directorate. E. R. Hoercher is also attorney for the company. The company's four kilns have been unable to supply orders, so work has started on four more kilns. The intention of the company is to construct 16 kilns. Mr. Forde, vice-president, has been making a visit to Los Angeles to examine the various plants there, and get some ideas for use in the plant at Merced. The plants of the Los Angeles Pressed Brick Co. and of the Pacific Clay Products Co. are of special interest.

MUCH CLAY AT CALIFORNIA EXHIBITIONS

Many of the brick and clay firms are taking part in the industrial exhibit in Oakland. Among them are the California Products Co., The California Brick Co. and the Livermore Fire Brick Works. At Sacramento the Sciot's Industrial Exhibition was held. One of the main features was the building and architectural exhibit of the Builders' Exchange. More than 35 architects, contractors, builders, lumber dealers, clay products manufacturers and others had displays. The display of brick work, pottery, and clay products manufactured in Sacramento and the surrounding territory was a revelation even to the people of Sacramento. Among the clay products displayed were those of D. A. Cannon & Co., the Sacramento Brick Co., Gladding, McBean & Co., W. J. Clifford and Harry Johnson.

WILL ENFORCE AMERICAN PLAN

The Builders' Exchange of San Francisco has adopted resolutions placing such materials as cement, lime, plaster, ready mixed mortar, rock sand and gravel, common, face and fire brick, terra cotta, and all other clay products on a permit basis. This action was taken to help enforce the American plan and the maintenance of the impartial wage board scale. The statement issued by the Exchange declares that before permits are applied for, builders should be certain that the job is running on the American plan. All jobs will be regularly inspected, and permits will not be again granted to any member or non-member who secures a permit and then does not run his job on the American plan and pay strictly the Builders' Exchange wage scale.

The unions declare that this action will halt construction in San Francisco, since union men will not work with non-union men, and employers will be prohibited from hiring union men by the Exchange and the Industrial Association, thru the action taken by the Exchange.

START BUILDING NEW PLANT

President Knopsnyder of the Colton (Cal.) Chamber of Commerce, reports that he has received word that much of the stock of the first unit has been sold by the Interlocking Tile & Sewer Pipe Co., and that an early start on the first unit of its Colton plant seems assured. The cost of the first unit will be $35,000 and it will be followed by two more. The company owns 320 acres of fine clay beds, that have been tested to its entire satisfaction and pronounced highly suitable for the finest tile, pottery, brick and conduit manufacture. It is believed that the outlook for the use of hollow tile in construction as a substitute for lumber is going to justify the investment and guarantee its prosperity.

Dryer, Transfer and Clay Cars, with Flexible Bearings.
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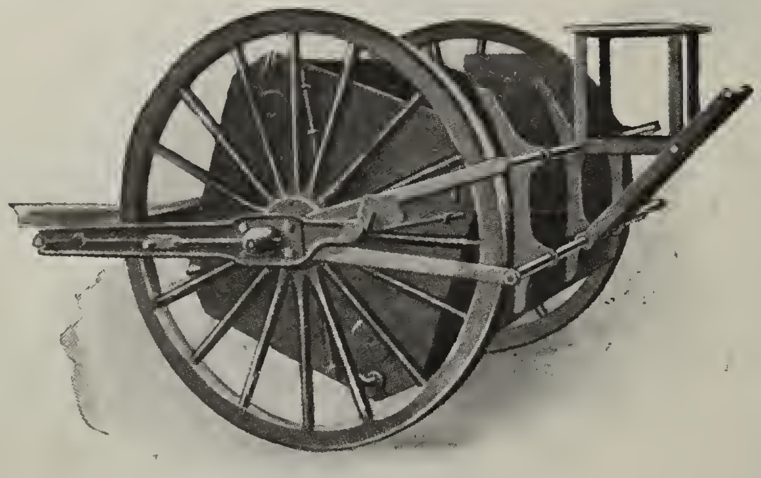

The Fernholtz Improved Clay and Shale Gatherer

This machine is adapted for taking clay or shale from the surface of the field. Actual tests and testimonials from brick, tile and pottery manufacturers in nearly every state in the Union verify our claim that with the use of this improved gatherer, about one-half of the cost of clay and shale gathering can be saved.

For full information regarding this machine, write to

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Brick, Hollow Ware, Roofing Tile, Floor Tile and Drain Tile can be made on the ROLLER PRESS.

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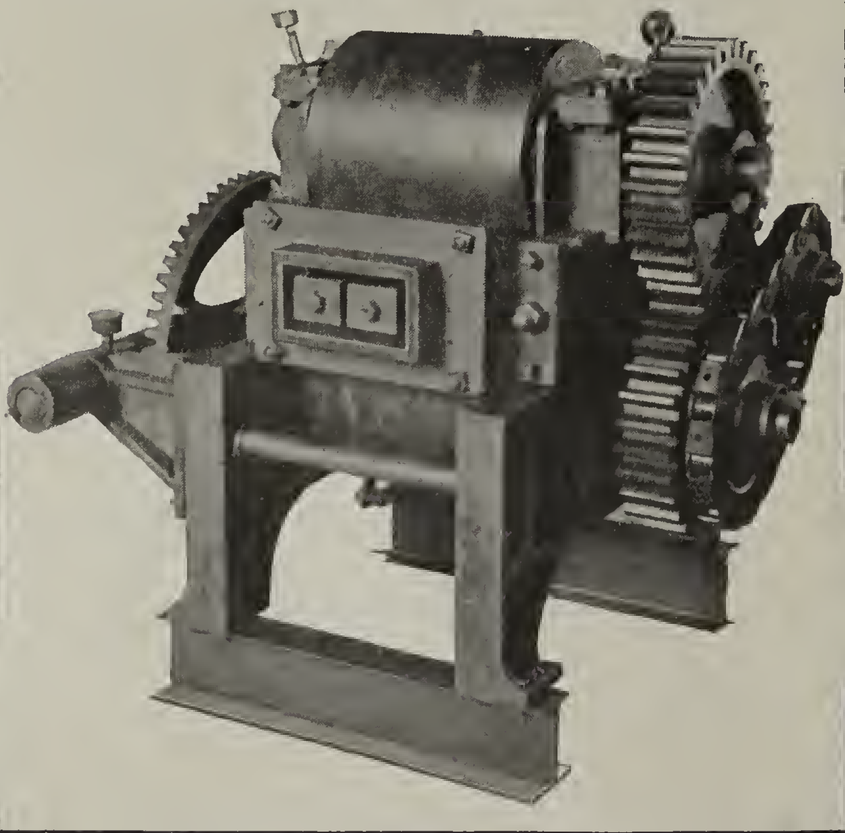

TO EXPLOIT SAN DIEGO CLAY DEPOSITS

The discovery of a veritable mountain of clay at Linda Vista within a few miles of San Diego, Cal., has been announced. The quality of the clay has been determined definitely by tests made by the Crousey Research Laboratories, New York; Hadfield-Penfield Steel Co., Bucyrus, Ohio; Skeats & Son, San Diego, and the Southern California Clay Products Co., Vernon. An organization to be known as the Vitrified Tiles Corporation has been formed at San Diego to exploit the deposits. Plans have already been made for the manufacture of building brick, face brick, paving brick, sewer brick and drain tile, hollow tile and electric conduit tile. No doubt is in the minds of the promoters of this corporation but that the venture will be successful. On the board of directors are Geo. W. Kummer, manager; Rufus Choate, of the Union National Bank; John F. Forward, Jr., of the Union Title Co.; Victor Kremer, owner of the deposit, and Siegfield Hagon, of the Continental National Bank of Los Angeles.

NEW CLAY COMPANY IN COLORADO

The Grand Junction (Colo.) Clay Products Co. has recently been organized by L. Roy Allen, manager of the Montrose Brick & Tile Co. The new company has been incorporated for $25,000 and dry press brick will be manufactured.

RESUMES MANUFACTURE OF SILO BLOCK

The La Junta (Colo.) Brick & Tile Co., operated by J. H. Mayhew, has again resumed operations for the manufacture principally of silo block. Mr. Mayhew has had many calls for this product recently, and it is hoped that several hundred new silos will be added to that locality in the near future.

TWO CONNECTICUT PLANTS START

Brick making operations have been started by the C. P. Merwin Brick Co. and the Richard Murray Brick Co. at their plants in Wallingford, Conn.

BUY CONNECTICUT BRICK COMPANY

The brick manufacturing business of James C. Lincoln at Newfield, Conn., has been acquired by the Tuttle Brick Co. The consideration is said to have been in the neighborhood of $60,000. The Lincoln Brick Works is located on Newfield road, in the rear of Mr. Lincoln's home. The transaction transferred to the Tuttle Brick Co. 75 acres of land, two dwelling houses, boarding house, tenement house, brick manufacturing machinery, electric shovel, brick racks, pallets and other brick manufacturing apparatus. The brick company gave a mortgage of $50,000 to Mr. Lincoln in the transaction.

Lewis M. Tuttle, president and secretary of the Tuttle Brick Co., says that his concern is not contemplating at this time to begin operations at the Lincoln Brick Works until Fall.

SECURES LARGE BRICK CONTRACT

The Christiana (Del.) Clay Products Co. is maintaining active operations at its plant, with large brick shipments for spring construction. The company has secured a contract totaling close to 10,000,000 brick to be used for the erection of about 100 dwellings in the vicinity of Washington, D. C. Charles E. Anderson is superintendent.

REMODELING REFRACTORIES PLANT

Remodeling of the American Refractories Co. plant at Tilton, Ill., is in progress and when completed the company will be in position to manufacture diaspore fire brick. The plant will probably be in operation at the end of May or beginning of June.

PIONEER PLANT STOPS WORK

The Huseman Brick Works at Pittsfield, Ill., one of the pioneer firms of the city, has been discontinued. Pittsfield and vicinity have had brick plants for 80 years, practically all of the buildings of Pittsfield having in them brick that were manufactured in the home town.

BUILDING TRACK TO NEW CLAY DEPOSIT

The Macomb (Ill.) Sewer Pipe Works has begun work on the narrow gage railroad which will run from its plant to the Russell farm north of Crooked Creek, which was leased a few months ago by the company. The old clay bed on the Runkle farm is giving out, necessitating the securing of a new source of supply. The clay on the new tract is declared to be of fine quality and the deposits are extensive.

BOOST BRICK AT BUILDING SHOW

The brick mason contractors of Indianapolis came to the front recently during the Home Complete exposition, with a lot of advertising which should increase the amount of brick used in building during the coming summer. The contractors also had a cooperative display at the exposition, in which was shown panels of brickwork and where the prospective home builder might select plans, or at least tentative plans for his future home.

Tuesday, May 9 was designated as Brick Day at the Home Complete exposition in Indianapolis. Brick, tile and burned clay products as building materials were featured. The official film of the American Face Brick Association was secured for the occasion. A special invitation was extended Dr. G. C. Mars, director of service of the A. F. B. A. and under whose direction the films were made, to speak on that day. The Illinois-Indiana division of the American Face Brick Association called a special meeting to attend the exposition as it was the home building branch of the building industry that was being featured and in which the greatest activity and interest is being shown at the present time.

TO BUILD 15 MILES OF BRICK ROADS

Fifteen miles of 18-foot brick highway on the new Santa Fe trail, connecting two ten-mile stretches already completed, will be constructed this summer in Reno County, Kan., near Hutchinson. The Stamey-Mackey Co. of Hutchinson has been awarded the contract for this work at a cost of $41,637 a mile.

WICHITA TO GET 65,000 CAPACITY PLANT

Wichita, Kan., is to have a new clay products plant soon. According to a report, the plant will be built on North Hillside, and will have a capacity of 65,000 daily, which will be increased as desirable. $30,000 worth of improvements will be placed on the site immediately, and the plant will employ approximately 100 men. Officers of the company are F. M. McCurtain, president; L. C. Letrell, treasurer; Oliver Mourning, secretary; C. A. Taylor, vice-president; W. S. Taylor, member board of directors.

LOUISVILLE PLANTS EXPECT BIG DEMAND

The brick and clay product plants of the Louisville, Ky., section are running at full speed in order to be prepared for supplying demand on about $2,500,000 in new work which has been contracted. There is an estimated volume of $10,000,000 more to come out.

OPERATING ON FOUR DAY SCHEDULE

Buisness with the Louisville (Ky.) Fire Brick Works is about equal to four days a week full operation at the Louisville and Eastern Kentucky plants. This is considered good

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MORSE Silent Chain Drives are 98.6% efficient for small or large drives. No worry about belt trouble, slippage of power and loss of production where Morse Chain Drives are installed.

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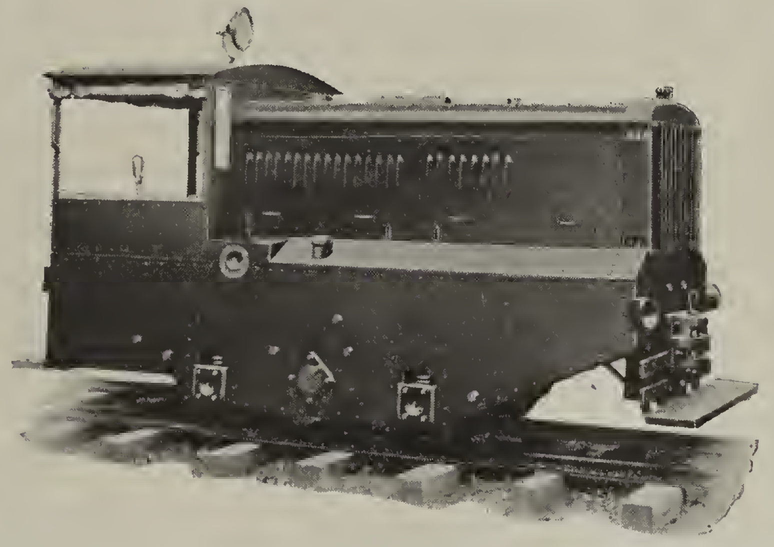

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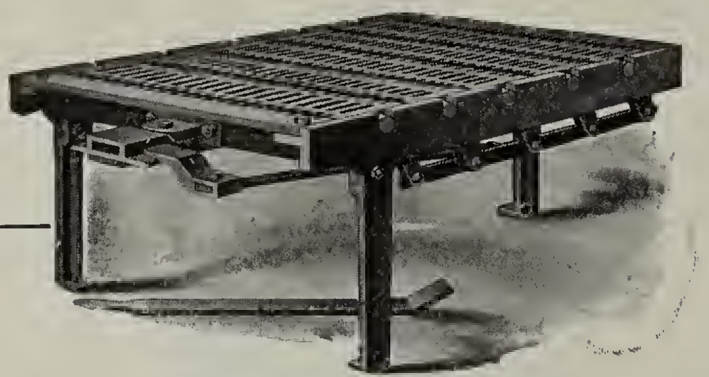

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The Minter System

Columbus, Georgia

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Ten of Our Recirculation Drier Tunnels

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922 Broad Street,
Columbus, Georgia

time, and with demand picking up the company anticipates a five day a week average before long. J. M. Kirk is now out on the road, going after business at the present time in Indiana.

CORBIN BRICK DOING MUCH BUSINESS

It seems from the orders being received by the Corbin Brick Co., Woodbine, Ky., that there will be quite a large amount of building this year in the southeastern counties of Kentucky. This plant is sending out a brick of excellent color and hardness, and some of the best contractors and builders of the section are sending their orders to this company, which is a new concern with a capital stock of $100,000.

RUNS BOTH PLANTS FULL TIME

The Southern Brick & Tile Co., Louisville, Ky., is running full time on both its brick and adjoining drain tile plant. The brick plant runs on a gas producer system, but the tile plant runs on coal direct. T. Bishop, head of the company, has been quite busy in installing tile under contracts accepted some time ago, and is booking some new orders for this department. The brick plant is getting a fair to good volume of small business, and has some bright prospects for future larger work.

WILL OPERATE ST. JOE PLANT AGAIN

M. P. and C. W. Schneider have resumed operation of their soft mud brick plant, known as the St. Joe (La.) Brick Works, after having leased it to the Salmen Brick & Lum-Co. of Slidell, who, however, never operated it. The plant has been thoroly overhauled, and the Schneider brothers expect to produce a first-class brick with a capacity of 40,000 per day.

MARYLAND GETS NEW BRICK PLANT

A company to be known as the New Brick & Tile Co. has been incorporated recently at Easton, Md., with a capital stock of $50,000, a report states. The company will build a new and modern plant to manufacture brick, drain tile and building block just outside of Easton. Members of the new company are U. G. Ross, Robert L. Camp, J. L. Woodsmith, Frank Ross, William L. Fleckenstein, J. Fletcher Park.

TO START REBUILT PLANT SOON

The Baltimore (Md.) Brick Co. will soon place its plant at East Baltimore, known as Plant No. 13, in operation, after a complete rebuilding of the yard, following the recent fire. Electrical and other new machinery will be installed at once. With this plant out of commission, the company has been pushing production to capacity at its other yards to furnish the spring demand, which has been unusually heavy. Moreover, the success attending the introduction of its Colonial brick in the New York market has led to large orders for this material, and extensive manufacturing facilities have been developed to supply the call. Warren Griffiss is general manager of the company.

FORM COMPANY IN MASSACHUSETTS

The Winchester (Mass.) Brick Co. has been incorporated with a capital of $50,000, to manufacture brick, tile, and so forth. The incorporators are Thomas J. Hynes and Ernest B. Rowe of Boston and Margaret F. Dorham of Somerville, Mass.

ST. LOUIS FIRE CLAY BUSINESS DULL

The April report of the St. Louis Federal Reserve Bank states that the fire clay industry is one of the lines of business that shows dullness altho there is a steady, upward business trend generally thruout the district. The general opinion is that business is more stable both in respect to stocks and prices, and the public is in need of commodities of all sorts. The iron and steel industry is especially in a healthy condition, there being an active demand for those lines. Collections as a whole have been satisfactory. The coal strike and especially the high water of the past month have had an adverse effect on business in the district.

STRIKES CURTAIL PRODUCTION

The Sayre & Fisher Co., Sayreville, N. J., has been forced to curtail production at its brick manufacturing plant due to a strike of employes, affecting a working force of more than 500 men. The action was taken by the men on account of a wage reduction at the yard, said to approximate about 25 per cent.

Laborers at the first brick plant of Henry Maurer & Sons, Perth Amboy, in the same district, are also out on strike, following the refusal of the company to meet an increased wage demand to 45 cents an hour. A total of about 300 men of a working force of 500 are idle.

INSTALL TWO 100 M. CAPACITY MACHINES

In readiness for a big season Terry Brothers of Kingston, N. Y., have installed two modern brick machines at their yard on North Street. Each machine will have a capacity of 100,000 brick a day.

INCORPORATE MOHAWK BRICK CO.

The Mohawk Brick Co. has recently been incorporated at Mechanicville, N. Y., it is said. The new company is capitalized at $20,000 and the following are named as incorporators: J. Bet, M. Fusto, C. L. Arbonisto. Attorney F. A. Tate of Mechanicville is representing the company.

"OPEN AIR" PLANT INSTALLING DRYER

Work has begun in the yard of the Roseton (N. Y.) Brick Co., one of the Hudson River plants, upon the installation of an automatic brick machine and a steampipe rack dryer. It is expected that the new improvements will be installed by June 1. The output should be greatly increased by the new machinery. Last year the Roseton Co. employed 250 men, with the addition of this equipment it is possible that nearly 400 men can be given employment this season. The daily output of the Roseton Brick Co. is about 80,000, and about 24,000,000 annually.

Other companies installing artificial dryers in the Hudson River district are the Jova Brick Works and the Denspoint Co.

WILL DOUBLE CAPITAL STOCK

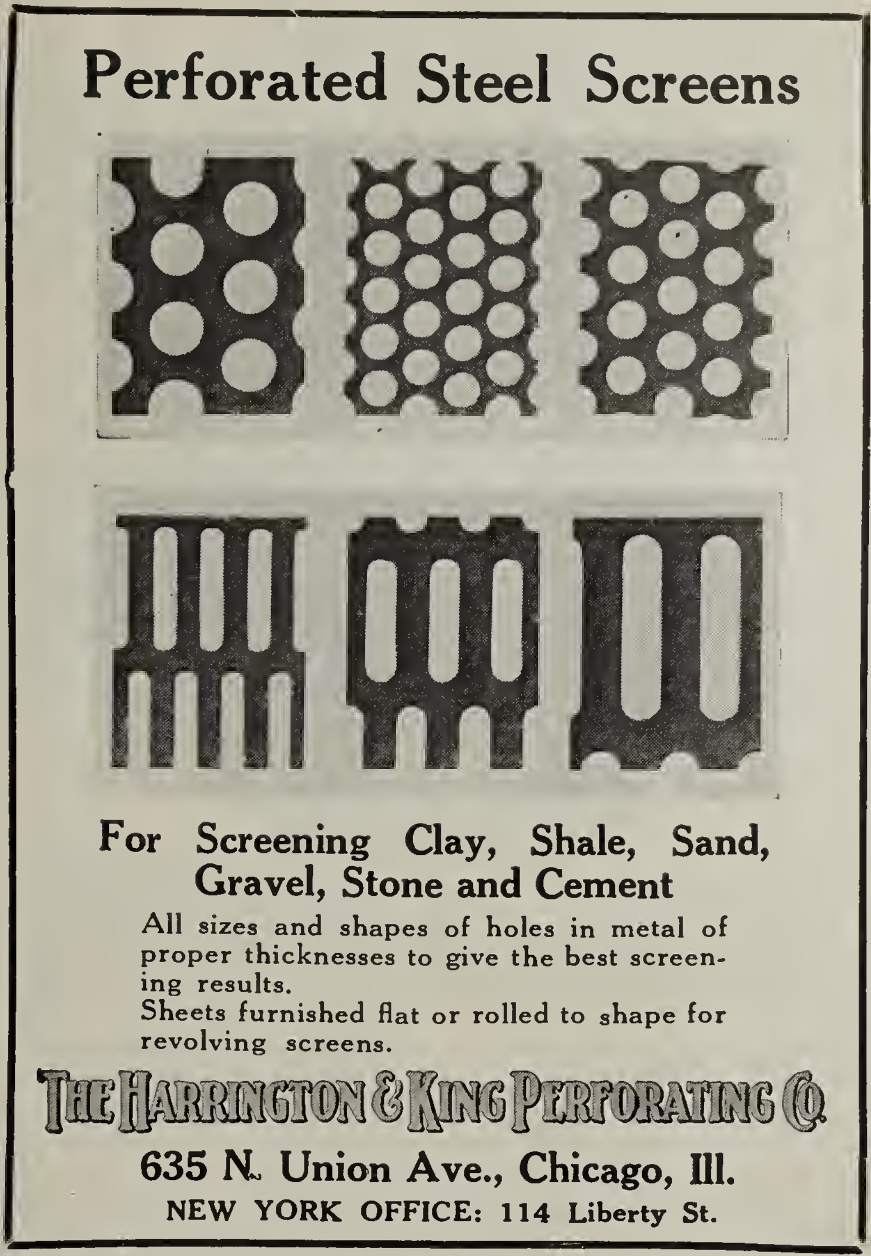
The Richland Shale Brick Co., of Mansfield, Ohio, has filed papers with the secretary of state increasing the capital from $100,000 to $200,000 to take care of improvements and extensions.

FORM REFRACTORIES COMPANY FOR $10,000

Wahl Refractories Products Co., of Fremont, Ohio, has been chartered with a capital of $10,000 to manufacture and sell brick, tiling and other clay products. Incorporators are A. C. Wahl, R. C. Loney, A. E. Culbert, R. F. Wahl and Charles Wahl.

SECURES INJUNCTION AGAINST LABOR

The Ross Clay Products Co., of New Philadelphia, Ohio, has secured an injunction against Thomas J. Price, president of Sub-district No. 3 of the Ohio organization of United Mine Workers and all other members of that union to prohibit them from trespassing on its property. The in-



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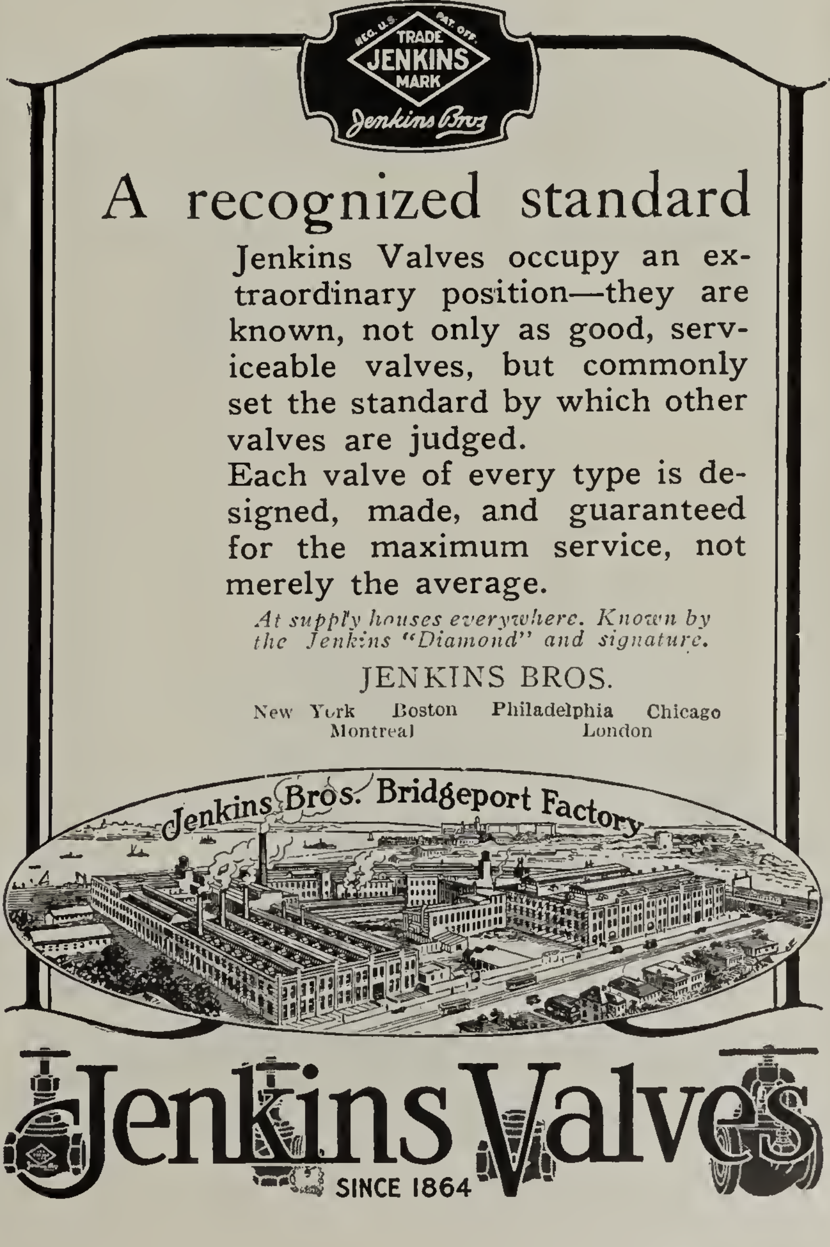

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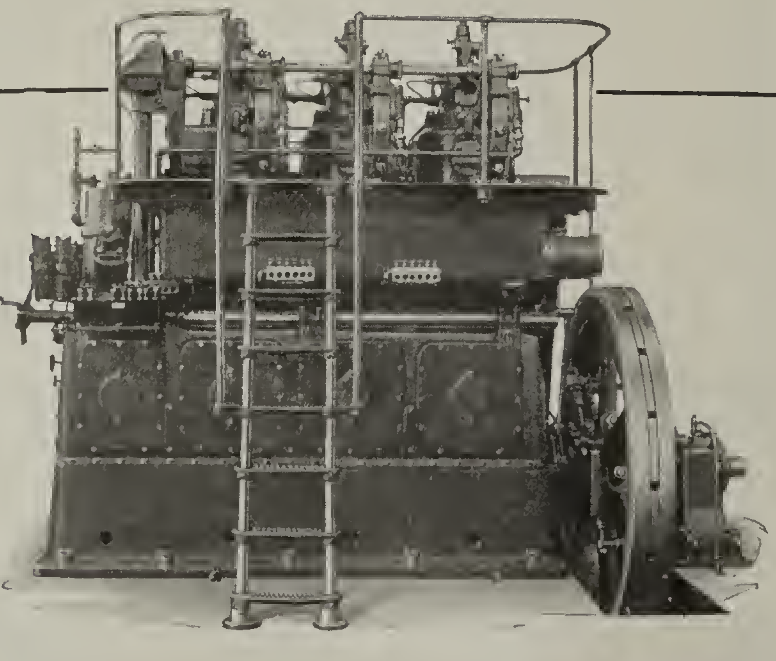


junction is the result of the coal strike in the mines in that section.

PLANNING EXTENSIVE IMPROVEMENTS

The Central Refractories Co., of Columbus, Ohio, will soon start rather extensive repairs at the company's plant at New Lexington, Ohio. The repairs will include dryers, cutters and other equipment. A. N. Spencer, vice-president of the company, will leave soon for a business trip in New York and other eastern points.

OPERATES THREE OF FOUR PLANTS

The Continental Clay Co., of Columbus, Ohio, is now operating three of its four plants located in the Canton district. Plant No. 1 at East Greenville, Ohio, is in full operation, producing 5x8x12 hollow building tile. Plant No. 3 at Salineville is producing 8x8x16 hollow building tile, while Plant No. 4 at Warmington is producing rough texture face and common brick. The plant at East Greenville, known as No. 2, is still down for repairs to the dryer and kilns. It will be placed in operation soon and will produce 4x5x12 hollow building tile.

LABOR TROUBLE SHUTS TWO PLANTS

The two brick plants of the Hisylvania Coal Co., of Columbus, Ohio, located at Trimble and Glouster, Ohio, are closed down because of labor troubles. These plants were closed before the coal strike, because of efforts made to unionize the two plants. With the coming of the bituminous coal strike, and the consequent closing of mines of the company no effort has been made to settle the wage scale with the brick workers. It is believed that the brick and mine rate can be settled at one time when conditions right themselves. One of the plants was manufacturing paving block and the other building brick.

CONTINENTAL SPENDS $45,000 ON REPAIRS

All of the plants of the Continental Clay Co., which has headquarters in Columbus and Canton, Ohio, are now producing clayware. The plant at Warmington, Ohio, which is making rough texture face and common brick has been in operation for some time. Repairs at all of the plants, costing about $45,000 have been completed and all are ready for work. The repairs consisted of new dryers, repairs to kilns at all of the plants, the installation of new machinery and many other changes. Cutters were installed at two of the plants. Warren B. Ferris of Columbus formerly vice-president is now president of the company.

COAL AMPLE TO RUN MANY MONTHS

Sewer pipe and fire brick plants in the New Philadelphia, Ohio, district report ample stocks of coal reserve, enough to run indefinitely at the present gait of production. One sewer pipe works has been stocking coal since January 1 in anticipation of the coal strike, it is said, and has sufficient to last three or four months.

One large sewer pipe plant reported that business had fallen off during this week from some unaccountable causes.

The brick industry continues more briskly. In the Uhrichsville district four plants are receiving shipments of coal from Pennsylvania and West Virginia mines, their reserve stocks having been depleted.

CAN NOT CURB TENEMENT BUILDING

The city of Columbus may have considerable difficulty in framing a legal ordinance preventing the erection of tenement or apartment houses in residential districts, the city law department has discovered. In redrafting the measure recently introduced in the city council, City Solicitor Leach finds a diversity of judicial opinion on the rights of municipalites to regulate the kind of structures that can be erected in specified localities. A number of court decisions hold that the building of apartments in resident sections cannot be stopped for purely esthetic reasons. Unless it is shown that the structures contemplated are a menace to public comfort, safety or general welfare they cannot be stopped. In the meantime the city solicitor is getting more information on the subject before proceeding farther.

COST OF OHIO ROADS DROPS

The Ohio Department of Highways and Public Works has issued a statement in which it is shown that the average cost of the 140 miles of highways which was contracted for by the department during the present year was $27,500 per mile, as compared with an average cost of $33,500 per mile for the 380 miles awarded the previous entire year. This embraces all types of construction, and while these proportions of types are not quite the same this year as in 1921, still the comparison shows the big reduction in costs. Cost estimates of the department are still being cut greatly by contractors bidding on the work. The first case of no bids received for an advertised job occurred April 10, when none were received for improving a stretch of .73 miles in Knox County, running past the state tuberculosis sanitarium. Miles of road improvement awarded this year divided among the various types are: plain concrete, 15; reinforced concrete, 38; macadam, 58½; brick, 20½; bitoslag, 1½; Kentucky Rock Asphalt, 1½, and grading only, three miles.

It was also reported that brick with macadam base of which three miles were awarded this year will cost $44,987 as against 23 miles of the same type of road awarded last year at $52,515 per mile. Concrete base, brick paving is now costing $34,554 as compared with $51,987 last year while monolithic brick roadway now costs $33,825 per mile as compared with $50,000 last year.

BRICK PRICE MAY GO UP

"Unless the coal strike is settled before the middle of May or not later than June 1, the price of brick will go up," said Paul B. Belden, secretary and general manager of the Belden Brick Co., operating several brick plants in the Canton district.

An advance of $1.50 a thousand in the price of common brick is announced by Mr. Belden.

Owing to the coal strike approximately 25 per cent of the company's plants have been compelled to suspend operations, due to lack of fuel, Mr. Belden said.

The Somerset, Ohio, plant of the Belden Brick Co. is being completely rebuilt, Mr. Belden announces. A new waste heat system is being installed and size of the dryers is being doubled. When completed this plant will be one of the most modern in the district.

Building activities in the Canton district are on the increase, especially dwellings and indications are that the season will be an excellent one. Brick companies are out after the business and competition is keen, officials of the larger companies say. Money is easing and home builders are being given more encouragement.

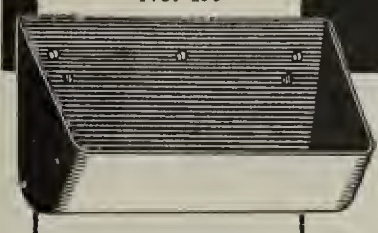
CHANGE LOCATION OF OFFICES

Frank B. Pope Co., manufacturers of fire brick and clay, Pittsburgh, Pa., has transferred its offices from its former location in the Arrott Building to 2223 Oliver Building. Correspondence should be addressed to the company at this new office.

LIBERTY CLAY CHANGES HEADQUARTERS

General offices of the Liberty Clay Products Co. have been moved from New Castle, Pa., to Volant, Pa. The new address of the company is Box 114, Volant, Pa., and all communications should be addressed there.

No. 196



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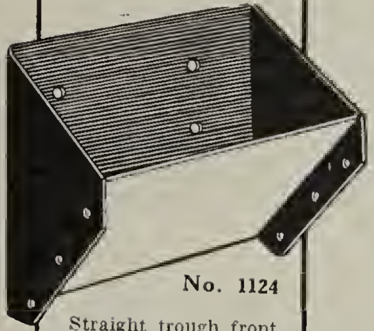
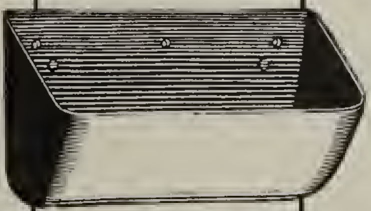


No. 1124

Straight trough front—pours load instead of throwing it.



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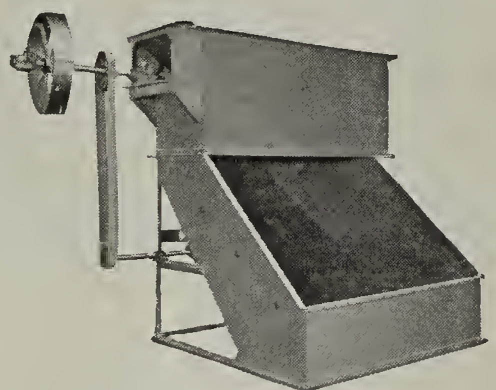

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RESUMES WORK MAKING DRAIN TILE

The Eagleville (Tenn.) Brick & Tile Co resumed operations the latter part of April and is running full blast. From now until fall the factory will be making a fine grade of drain tile, and it is thought that it will hardly be possible to supply the demand. It is claimed that tile made by this company many years ago is still in the ground satisfactorily draining valuable farms.

FORM NEW COMPANY IN TEXAS

The Palmer (Tex.) Pressed Brick Works in Ellis County has been incorporated with a capital stock of $21,000, it is stated. Incorporators are Y. Barron, J. R. Beck and L. B. Griffith.

BRICKLAYERS START BUILDING FUND

Union bricklayers of Texas recently got together and established a building and loan fund which will be used for loans on a brick or masonry home owned by members of the organization, it is said. Each member of the union will contribute $1 a month to the fund, and this fund will be for the aid of members in good standing of at least 19 years in a trade union recognized by the American Federation of Labor. The fund will also be used for the production of materials for masonry buildings in case of an industrial fight against a bricklayer, mason or plasterer.

WEST VIRGINIA COMPANY INCORPORATES

Incorporation of the American Shale Brick Co., Martinsburg, W. Va., with a capital stock of $100,000, has been announced. As incorporators are mentioned: F. Vernon Taler, Henry J. Little, Martinsburg; Charles L. Magee, Washington, D. C.; James N. Dyson and James H. Dawes, Philadelphia.

MAY OPEN NEW FOND DU LAC PLANT

John J. Breister of Fond du Lac, Wis., is planning to open up a brick manufacturing establishment in that city, according to a report. Orders for the necessary machinery have been placed and it is hoped that the plant will be in operation early in May. The company will manufacture brick by the soft mud process and will not attempt to make dry press brick.

LOOKS FOR BUSY SEASON

A busy season is anticipated by the Marshfield (Wis.) Brick Co., which has recently resumed operations after the winter idleness. Outside of local territory the output is handled by Gagnon Bros. of Green Bay, who report enough orders on hand to keep the plant busy for a considerable time. Thirty or more men will be employed. It is probable that new machinery will be installed this summer to increase production.

MILWAUKEE PLANT OFFERS TO SELL PIT

The building and grounds committee of the Milwaukee, Wis., common council, has recommended that the city buy 35.6 acres of exhausted clay fields offered by the Burnham Bros. Brick Co. at $50,000. The city would use the land for a dumping ground. The price is $13,000 less than the assessed value, and as an additional condition, the Burnham company offers to drop its court case attacking the validity of the zoning ordinance whereby one of the fields had been placed in a residence district.

CANADIAN COMPANY INCORPORATES

The Stephen Brick Co., Ltd., with head office at St. John, N. B., has been incorporated with a capital of $99,000 to take over the business known as Lee's brickyard.

THE BUILDING SITUATION

(*Continued from page 764*)

workers have increased. The scale for masons' laborers is now 75 cents an hour, instead of 72 cents, as heretofore.

Bricklayers and masons at Trenton, N. J., have declared a strike with demand for increase in wage scale from $9 to $10 a day; the men have been offered $9.50 by the employers, but this has been refused. On large operations in nearby cities, bricklayers are receiving $12 a day, so it is likely that the workers will receive their demands or leave the city.

Philadelphia Progresses

The month of April at Philadelphia, Pa., broke all previous records, showing gross construction to an amount of $11,361,610; the nearest figures are those for the same month in 1920, which stood at $9,882,600. The first four months of the present year show an increase of $21,900,000 over the corresponding period of a year ago. Two-story brick dwellings are the big feature of current operations, and during April, permits to an estimated valuation of $3,115,975 for work of this character were issued.

Building operations at Harrisburg, Pa., are also breaking all records. During April a new high-water mark was established with the filing of plans for 137 operations, valued at $415,000.

Baltimore Continues at High Point

Construction work at Baltimore, Md., has shown a marked increase since the middle of April, with brick dwellings easily the leader in bulk of operations. The weeks now are averaging from 200 to 235 building permits, with estimated cost around $2,000,000. The Industrial Bureau of the local Board of Trade is negotiating for a number of new plants in the city, representing a total investment of close to $30,000,000.

There is a heavy demand for brick at Baltimore and local yards are developing maximum capacities. The city is purchasing large quantities of vitrified clay conduit for new underground installations of the electrical bureau.

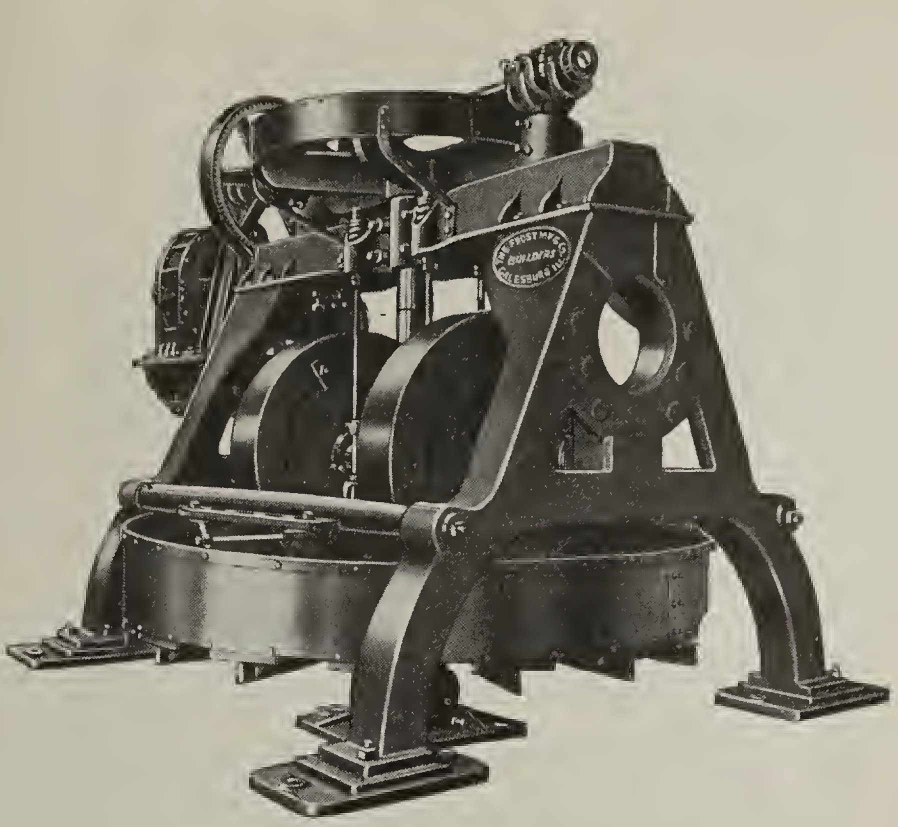
Cleveland Bricklayers Still Striking

Building in the Cleveland district is rapidly hitting a stride that will insure a greater total than any year since the beginning of the war period. Labor difficulties have seemingly been satisfactorily adjusted. At present the bricklayers are the one remaining bone of contention. Contractors insist that the $1.10 rate is adequate and union officials declare that they will not settle for less than $1.25. However, this dispute, as has been the case with all others, will undoubtedly be settled before it does any great amount of damage. The effect of the American Building Exposition is already being felt, and contractors are finding themselves with numerous requests for bids. Banks and mortgage companies are easing up with the improvement in general conditions and financing a home is easier.

Labor Fails to Stop Chicago Building Boom

Altho the total number of permits issued in April in Chicago was less than the number issued in March the number of residence permits issued was even more than the previous month. The April report of the building commissioner is as follows:

Class	April 1922	March 1922	April 1921
Apartments	377	409	57
Residences	701	686	346
Industrial Buildings	153	176	111
Miscellaneous	84	56	19
Totals	1,315	1,327	533
Value	$17,076,560	$19,333,900	$15,198,900



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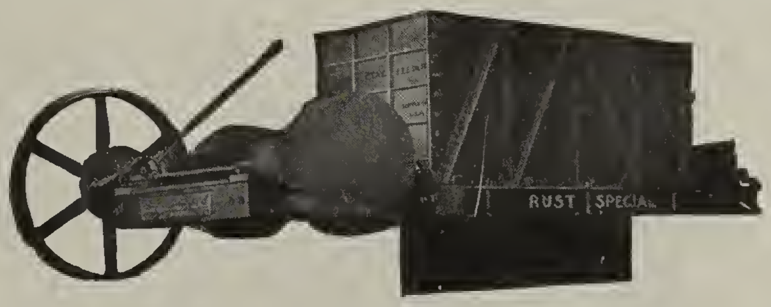

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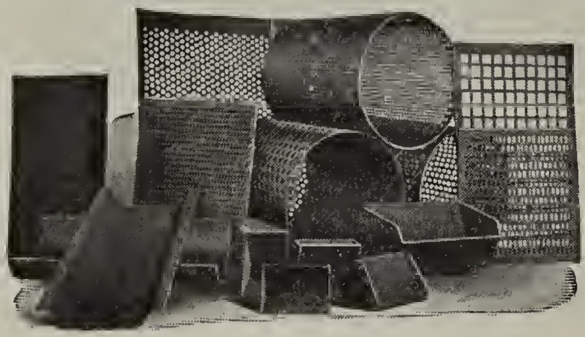

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The labor war in Chicago is becoming more and more felt every day altho construction operations, due mainly to the activity of the Citizens' Committee to Enforce the Landis Award, are going along at an almost record breaking pace. Bombings and sluggings are becoming more frequent and in several instances have resulted in the death of the victims. The latest effort of the unions who have repudiated the Landis Award to tie up buildings and force contractors to meet their terms has manifested itself in the declaration of a strike. This strike, however, is not likely to become dangerous, as a number of the most important unions are not in sympathy with the movement.

Advertising in Other Cities for Men

Some of the local construction companies are advertising extensively for help in other cities. The Empire Construction Co. recently carried a good sized advertisement in a Brooklyn paper asking for bricklayers, plasterers, stonecutters and stoneplanemen. These, the advertisement stated must be union men. Another section of the "ad" called for carpenters, lathers, painters, plumbers, slate and tile roofers, and tar and gravel roofers. The first group mentioned are those who have agreed to the Landis Award, whereas the second are outlaw unions. Chicago companies are also advertising in Louisville, Ky., Youngstown, Ohio, and other cities for men.

Construction in Louisville Gains

Louisville, Ky., is sharing in the general building activity thruout the country and preliminary reports indicate that the month of May will in all probability break records. Building permits for the first three months this year compared with the same months in 1921 are as follows:

Month	1922	1921
January	158	106
February	223	153
March	376	352
Total	757	611
Value	$1,557,200	$2,131,050

The value of permits issued during April is estimated at approximately $1,100,000.

St. Louis Reports Big Operations

There is every indication that this will be the best building year in St. Louis since 1919, and possibly since 1914. Already new construction is twice the total for the similar period in 1921. Since January 1, including April 30, 3,331 building permits were issued, totaling $6,315,886 compared with 3,103 permits for $3,149,430 for the first four months of 1921. The total brick permits for April were 504 and the estimated value $1,823,498; compared with March this is an increase of 53 permits and $307,953. Total permits for April were 1,163 and $2,111,596 in value and in March 1,026 permits valued at $1,799,005.

San Francisco Strikes Unimportant

The Bricklayers and the Hod-Carriers Unions are still holding out for an increase from nine to ten dollars per day. New men are constantly coming in from the East and from other parts of the state. There are enough men available, so that none of the large building in the center of the city is being delayed. The plumbers strike is not in any way delaying the progress of building now under way. Some of the plumbers are at work on the smaller jobs, where they do not feel that they will be brought into conflict with their union. There is now a greater shortage of help in some of the trades not on strike than in those that are striking. This is especially true as to lathers and plasterers. There is also some report of strike troubles in San Mateo and Santa Cruz counties.

Machinery and Equipment

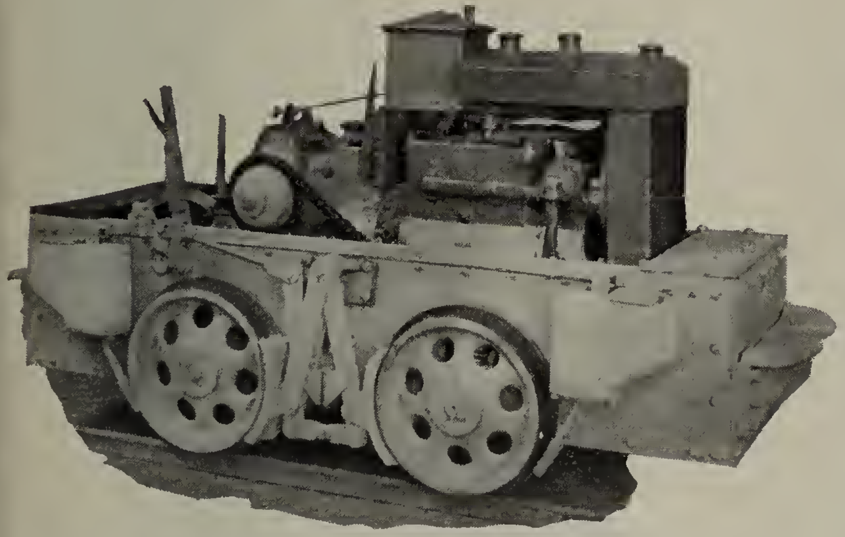
Devices and Methods, New and Old Concerning Which Information of Interest to the Clay Manufacturer is Published

ATLAS TYPE "G" GASOLINE LOCOMOTIVE

The Atlas Car & Manufacturing Co. has developed a locomotive known as "type G" to meet the demand for a compact, dependable gasoline locomotive for light haulage service at an attractive price. It is a substantial machine complete in every detail, and is built to stand severe service.

The motor is of the rugged tractor type with all parts thoroly enclosed and protected, but still easily accessible. The intake air is washed by passing thru a water clarifier which removes the dust. A simple and effective splash system of lubrication is used. The lubricating oil is introduced at one point in a central reservoir which lubricates all parts of the motor and transmission.

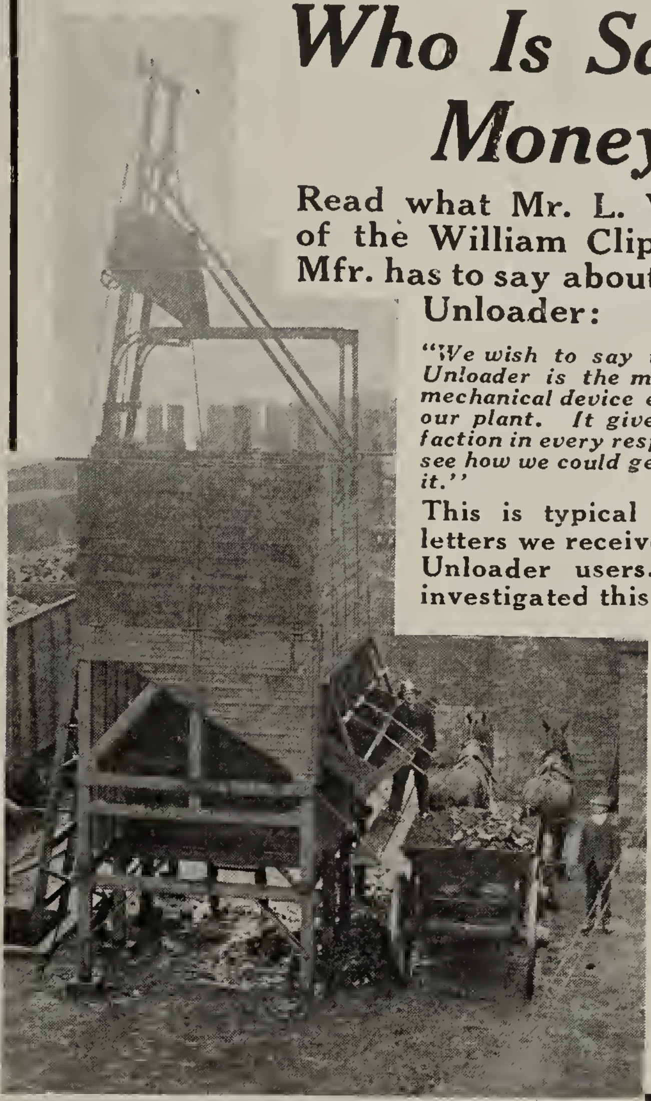
The clutch is placed just behind the flywheel in the usual manner and the propeller shaft mounts at its extremity a bevel pinion which is in constant mesh with two bevel gears, causing the bevel gears to rotate in opposite directions. Forward or reverse motion is obtained by engaging either one of these bevel gears by means of a sliding gear clutch. A neutral position is also provided. The drive from the bevel gear shaft is by a spur gear reduction to the jack shaft on the extremities of which are mounted sprockets which drive the axles thru high-grade roller chains.



New Type of Gasoline Locomotive Developed by the Atlas Car & Manufacturing Co.

The power plant is mounted in a standard locomotive frame such as the Atlas company has used for years for their electric locomotives in mining and industrial service. Complete locomotive equipment is provided such as hand operated brakes with renewable brake shoes, hand operated sanders of rugged design, structural steel frame and locomotive type bumpers.

Speed changes are obtained by throttle control similar in operation to steam locomotives. All control levers are conveniently grouped in the operator's compartment.



Here's Another User Who Is Saving Money

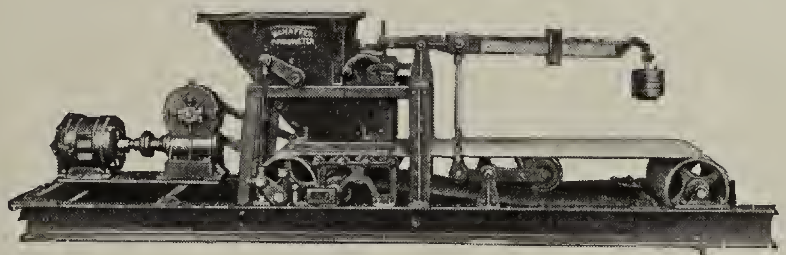
Read what Mr. L. W. Hartled of the William Clippart Brick Mfr. has to say about his Galion Unloader:

"We wish to say that the Galion Unloader is the most satisfactory mechanical device ever installed in our plant. It gives perfect satisfaction in every respect, and cannot see how we could get along without it."

This is typical of the many letters we receive from Galion Unloader users. Have you investigated this machine?

Write us right now! Quick response.

The Galion Iron Works & Mfg. Co.
GALION, OHIO



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S E CO E

The Gateway to Better Things

BOOKS

The Master Workman has a Master Mind—he knows perfectly his own merit, and in order to increase his knowledge, he studies the methods of other men— in the only way that he can—in books. If you would be master of your work you must read and know what others know.

Bricklaying in Modern Practice	1.20
Bricklaying, Rudiments of Practical	.75
Bricklaying System	4.00
Building Construction and Superintendence, Part 1, Masons' Work	7.00
Ceramic Industries (A Treatise on) E. Bourry	6.00
Clay Plant Construction and Operation	4.00
Clays: Their Occurrence, Properties and Uses	5.00
Clayworkers' Handbook	6.50
Clay Working Problems	1.50
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Modern Brickmaking	7.00
Observations on Pottery	.60
Powdered Coal as a Fuel	4.50
Practical Farm Drainage	1.75
Producer Gas and Gas Producers	4.00
Refractories and Furnaces	5.00
Rock Excavation, Handbook of	5.00
Scientific Industrial Efficiency	2.00
Scumming and Efflorescence	.50
Silo (The Hollow Tile) 100 copies	5.00
Steam Power	2.50

Select the books that you want the most, and we'll send them to you postpaid upon receipt of price, but we can't send any books on approval. All foreign books subject to 15 per cent. import duty.

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Among Our Advertisers

Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

NEW TYPE DIPPER

The Bay City Dredge Works, Bay City, Mich., known in the clay products industry thru their One-Man Excavator, are now manufacturing a dipper (Type "Z" it is called) for use in connection with Bay City Dredges. It has not yet been adapted to the One-Man Excavator, but it is the plan of the manufacturers to build it for the large floating dredges and steam shovels.

A particular feature of this dipper, making it of interest to clay plants operating steam or electric shovels, is that it dumps itself clean when handling sticky dirt. A large number of clay concerns handle sticky material, which naturally slows up the operation of their shovels.

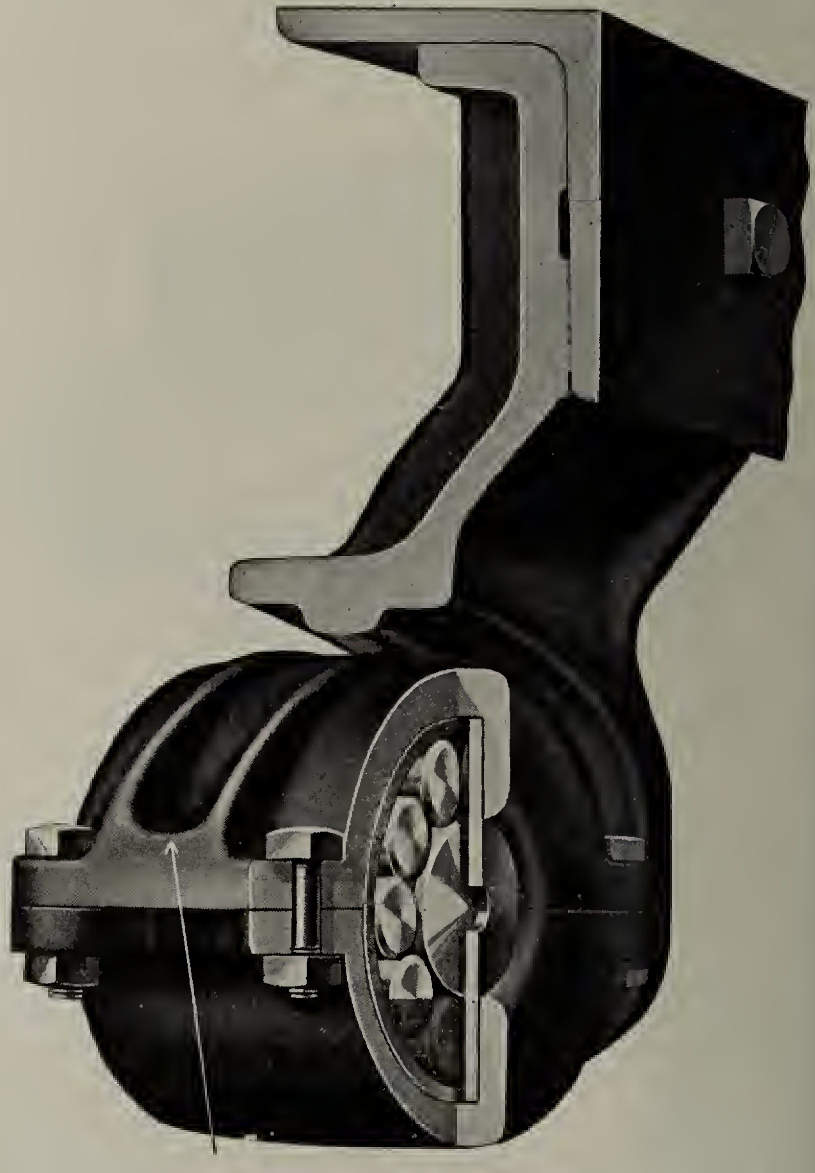
The type "Z" dipper does not have a back or bottom door thru which material has to be dumped. The dipper turns completely over, so that everything in it comes out. When handling stiff or sticky clay with an ordinary dipper, the material has a tendency to "roll." On account of this, it is impossible to get a full load with the old type dipper. The type "Z" which is built on the scoop principle allows the dirt to roll up in a ball enabling it to carry at least twice as much material as the usual type dipper.

* * *

SAVES LABOR AND OIL

An improved flexible boxing with oil reservoir was placed on the market about two months ago by The Chase Foundry & Mfg. Co., Columbus, Ohio, and since that time they have equipped approximately 1,400 cars with it.

The bearing has the same adjustable advantages as the



Sectional View of Bracket and Boxing. Arrow Points to Saddle in Which the Bracket Support Rides, Giving Flexibility to the Boxing.

Pulling Down Labor Costs

In seeking a decisive way to lower labor costs, many contractors are turning to STANDARD GRAVITY CONVEYORS.

They find that the cost of common labor is cut to the minimum and skilled labor is kept busy because they don't have to wait for materials.

This method is decidedly economical as the power costs you nothing and the upkeep is almost negligible.

STANDARD CONVEYORS are so scientifically and sturdily built that tons and tons of weight can travel over them before they show any signs of wear.

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"HURRICANE" DRYERS

Drying Electrical Insulators

THIS TUNNEL DRYER was the means by which one large plant, manufacturing high tension electric insulators, cut more than a week from their manufacturing schedule. It now takes but 48 hours to completely and uniformly dry this ware. It previously required from ten days to two weeks.

Shrinkage checks are practically nil, as the drying conditions are always under automatic control. Breakage due to handling is eliminated since the ware is not touched from the time it leaves the green finisher until after it has been dried, and ready to be dipped. The insulators are handled on rubber wheeled trucks, being progressed through the dryer by an automatic pushing apparatus, at regulated speed. Even the heaviest pieces are turned out in excellent shape.

It gives complete satisfaction to know that you have dependable equipment that consistently turns out your ware in fine condition, precisely on schedule. Have You?

You can rely on "Hurricane" Dryers. Let us describe to you the possibilities of these machines at your plant.

Send for complete details, NOW.

The Philadelphia Drying Machinery Co.
3351 Stokley St., Philadelphia, Pa.

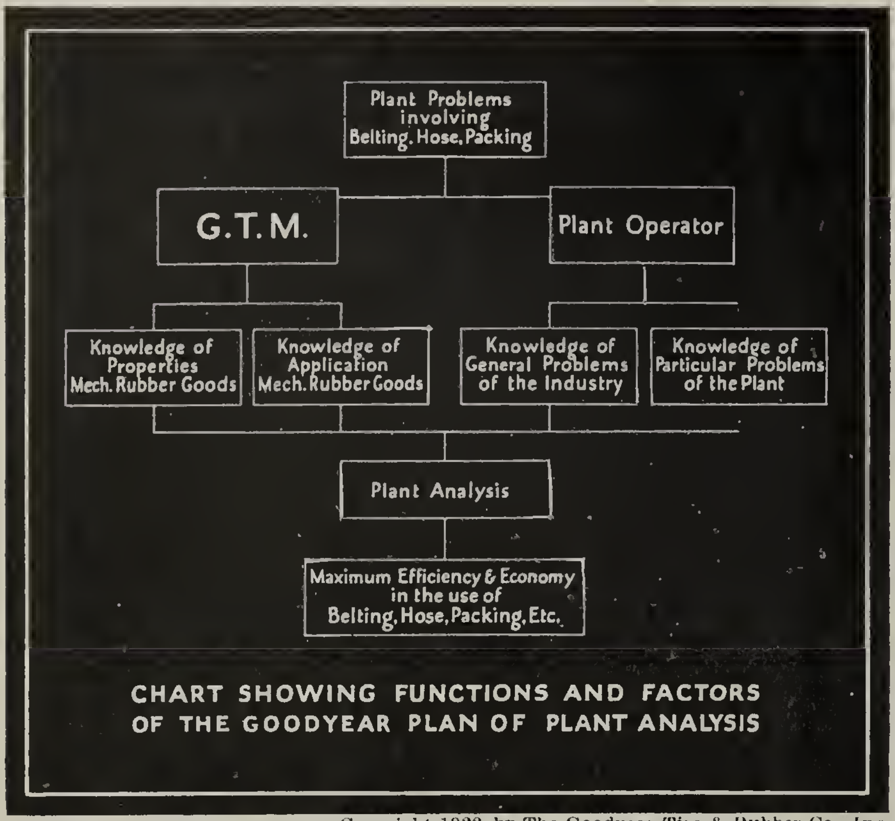
Plant Problems involving Belting, Hose, Packing
G.T.M.
Plant Operator
Knowledge of Properties Mech. Rubber Goods
Knowledge of Application Mech. Rubber Goods
Knowledge of General Problems of the Industry
Knowledge of Particular Problems of the Plant
Plant Analysis
Maximum Efficiency & Economy in the use of Belting, Hose, Packing, Etc.

CHART SHOWING FUNCTIONS AND FACTORS OF THE GOODYEAR PLAN OF PLANT ANALYSIS

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Plant Analysis Service—and the G.T.M.

Look at this chart. It pictures, in the language of the plant superintendent and the industrial engineer, the place occupied by the G. T. M.—Goodyear Technical Man—with relation to your belting, hose and packing problems.

It identifies the G. T. M. for what he is, the tested link in the chain of service connecting your need for efficient plant operation, and your knowledge of the special working conditions of your plant, with the Goodyear Plan of Plant Analysis and the products Goodyear makes for industrial use.

The G. T. M. is an expert in his line. He knows the properties of good mechanical goods. He is trained in the science of their specification and application. His work takes him into many plants, in many industries, so that he is familiar with most transmission and conveying problems, and is a practical authority on many of them.

When he comes to your plant, he comes as a friendly analyst of your operating problems, your troubles, maybe. He doesn't pretend to know it all. He takes the advice of your superintendent and engineer. He gives close attention to their experienced knowledge of your particular working conditions.

His sole object is to fit what he knows about belting, hose or packing to the demonstrated conditions of service in your plant. If he can find out what you need, and Goodyear can furnish it, he will recommend it to you, and after its installation he will follow it up with a sincere service.

Isn't it logical that a belt, or other equipment, that is constructed right in the first place, and then is specified intelligently to the work it is to do, is much more likely than any other product is to serve you longer and better, with freedom from trouble, and return to you the full value of its utmost efficiency and economy? The Goodyear Analysis Plan is based on that reasoning, and the G. T. M.'s work is to insure that you get the equipment that will serve you longest and best.

There is a G. T. M. in your neighborhood. Call on him for an analysis of your mechanical goods problem, whether it involves a single unit or an entire plant, a conveyor or a transmission, a hose or a packing equipment. For further information about the G. T. M., and his work, or the kind of service Goodyear products give in your particular industry, write to Goodyear, Akron, Ohio, or Los Angeles, California

GOODYEAR

well-known Chase Flexible Bearing for dryer cars that has been in use for many years, and in addition, it will retain sufficient oil to allow the cars to pass thru ordinary dryers approximately twenty times without being re-oiled.

The boxing is of the split type and contains a hard steel bushing into which the rollers are fitted, and a steel washer is placed at each end of the bushing, completely housing the bearings.

Ordinary dryer car bearings must be oiled every time the cars make a trip thru the dryer, so you can readily appreciate the saving in labor and oil, since this new type will not have to be oiled until the cars have passed thru approximately twenty times.

⁂

CELITE CUTS TRANSPORTATION. CARGO SHIPMENTS REDUCE COST TO CONSUMER

The first large freighter to be loaded entirely with Celite Products recently left Port San Luis, California, bound for Atlantic ports by way of the Panama Canal. A second freighter is now receiving its cargo, and this will be followed by still another boat also devoted exclusively to their materials.

Although the Celite Products Company have made water shipments quite frequently in the past to the Atlantic coast, this is the first time that three entire vessels have been used to the exclusion of other cargos. Loaded to capacity, these ships make a departure from their established transportation method which will undoubtedly be repeated at frequent intervals.

In order to handle their materials in this manner, it is necessary to ship by automobile truck from the producing point at Lompoc to Harris Station on the Pacific Coast R. R. The railroad carries from this point directly to the loading wharves. Despite two short hauls and rehandling, the Celite Products Company find that this method of water shipment reduces the final cost to consumer to an appreciable extent. It enables them to give large users the full advantage of gross shipment and decreases the transportation charge on stock maintained in Eastern warehouses.

⁂

The Dodge Sales and Engineering Company, Mishawaka, Indiana, manufacturers of power transmission appliances and heavy oil engines announce the removal of their New York City branch from 21 Murray Street to the new Dodge building, located at the corner of Park Place, W. Broadway and Murray Streets and known as 53 Park Place.

The new Dodge building is twelve stories high and is of steel and concrete construction and is modern in every detail. The exterior is of terra cotta up to the second floor and the upper portion is faced with light brown brick, ornamented with terra cotta panels. The entrance and lobby are imposingly finished in marble and bronze. Four elevators are installed in the building and special provision has been made for extra heavy floor loads which permits of ample provision for the storing of emergency trade service stocks as well as display of power transmission machinery and heavy oil engines.

The Dodge Manufacturing Company have maintained a branch and warehouse in New York for over twenty-eight years and in moving to their new building conveniently located to shipping and railway facilities they will be able to handle more efficiently their large local and export business.

⁂

The Bucyrus Company, South Milwaukee, Wisconsin, have under way at the present time, extensive enlargements to both its plants at South Milwaukee, Wisconsin and Evansville, Indiana.

These changes and re-arrangements are planned to take care of their increasing volume of business and to enable them to manufacture more economically. In the South Milwaukee plant, where all the larger machinery is built, a new gray iron foundry is now under construction, 276 feet in length.

The old gray iron foundry, now the south end of the steel foundry, is being converted into a cleaning room with annealing ovens, sand blast rooms and a welding room. A large addition is also being made to the steel foundry moulding floor, and an electric furnace is being installed. Extensive improvements are also being made in the foundry storage yards.

In the plant at Evansville, Indiana, which specializes in the manufacture of small revolving shovels, the machine and erecting shops are being considerably enlarged to enable the company to handle its rapidly increasing business in these machines.

BRICK and CLAY RECORD

Established 1892. Now in its thirtieth year.

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By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland Kansas City
Address all communications to home office

Chicago, May 30, 1922
Vol. 60 No. 11

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Make Profit But Keep Prices Down

GENERALLY when business confidence is restored and prosperity promises a return call, things begin to happen to commodity prices. As stated in the last issue of Brick and Clay Record, during times when business is good, prices are too frequently charged according to what the traffic will bear. On the other hand, when business is bad, price cutting is prevalent. In neither instance is there any regard given to cost, and in the long run, an average of these two extremes enables the plant to make a bare existence.

Just at this time the business situation in the construction industry is good. Prices are climbing, but again we say, this is not the time to raise prices if it possibly can be avoided.

The steel industry can relate an experience which brings out the wisdom of maintaining the present price levels, and it is coincident that, in the May 18 issue of the Iron Trade Review, two days following the publication of the editorial on price raising in the preceding issue of Brick and Clay Record, an editorial appeared on the same subject as applied to the steel trade.

The editors of the Iron Trade Review wrote:

"Steel manufacturers learned an important lesson from the collapse of 1920, and have had plenty of time to digest it. That is, that the asking of excessive prices does not pay over a period of time. There now is a more thoro understanding of the fact that a price neither too low nor too high, which consumers will be satisfied to pay, should have the effect of prosperity.

"What steel prices are going to rule, even in the near future, is something that nobody now can predict because of existing factors of uncertainty. One of these is the price of fuel. A shortage of labor is developing and wages probably will go higher; in fact in some instances iron and steel plants already have increased the rate for common labor. On the other hand freight rate reductions may come.

"The only thing that is certain at this time is the disposition of the more important producers to adopt reasonable values. Steel producers know the asking of excessive prices not only discourages buying but encourages manufacturers of other products to ask excessive prices. If they bear keenly in mind the lesson of 1920, which they paid so high a price to learn, present indications are that they will be amply repaid. Practically all the factors that indicate future business conditions are favorable. Continuation of a fair price policy in the steel market will do much to assure the gathering of a bountiful business harvest in this country for an indefinite period in the future."

High prices do not make prosperity. In the case of retail stores, those which are making the most money today are not the ones which are charging the high prices.

The nation needs housing that it can pay for on its present earnings, but its present earnings will not permit construction at high costs. High costs will simply bring on another lull in building if we are not careful.

The present situation in New York City, as described in the department devoted to building situation, is an excellent example of what happens when prices rise. In New York City the permits for the month of April dropped considerably during the latter part because of increases in prices and the impending brick shortage.

At the present time brick is getting unfavorable publicity in New York City because of the high prices and shortage. This is doing the industry no good, and while we do not believe the manufacturers to be entirely to blame, nevertheless, the results are the same as tho prices were raised.

The best thing that could happen to the industry would be a long era of low prices—prices that would be so favorable as to induce the more universal use of brick in all forms of construction. Such a period would increase the quantity of brick produced and would increase profits because of larger production. But the most good would not come from this source. The real worth to the industry would be the change of style of construction.

Altho most of us appreciate the American cordiality to new styles in clothing—in automobiles—but few of us appreciate the opportunity to extend this to brick construction. Let's get permanent construction permeated in the minds of the people by enabling them to build at a comparable cost. Moderate prices will do it and be worth the sacrifice!

Your Time is Valuable **How often have you looked thru 15 reference books and many catalogs for some specific information? After a thoro search, how often did you fail to find what you wanted?**

Let's avoid this in the future. Our Clay Products Cyclopedia is completed. As you read this, Uncle Sam will be receiving the copies addressed to those who have subscribed.

It contains 752 definitions, covering 121 pages, of the processes, equipment and materials used in every branch of the clay products industry. How many of those 752 can you name? Do you know how to describe a lawn, an airflow meter, chrome, a hacking machine and many others? What is the difference between a setting machine and a setting conveyor?

In addition we have 72 pages full of statistical and detail information that is needed daily by every executive from manager to foreman.

Do you desire complete tests for your manufactured product or your raw material, data on building kiln flues and stacks, comparison of oil and coal for fuel, materials used in pottery manufacture, and similar information? There is an index for this information for your immediate reference.

If you postpone ordering your copy of this book you will lose far more than the cost thereof. Order it now before the supply is exhausted. The cost is $3 per copy. Can you not convince yourself that it will save more than one cent each day during the next year?

Another Rate Reduction! - How It Effects You

I.C.C. Orders Ten Per Cent. Lower Freight Rates—Will Increase Buying Power—Key to Better Business Era

JUST as the forms for this issue were being closed, the first announcements were made of the I. C. C. orders for freight rate reductions averaging ten per cent. on railroads of the United States. This decision is heralded as a sure business accelerator. The saving in carrying tolls is expected to increase buying, which in turn will stimulate industry and diminish unemployment.

It is reported that the order of the commission defines the percentage of reduction as follows:

In the Eastern group, also between points in Illinois territory and between Illinois territory and the Eastern group—26 per cent., instead of the 40 per cent. authorized in the decision last cited (the rate increases of 1920).

In the Western group, and between the Western group and Illinois territory—21.5 per cent. instead of the 35 per cent. so authorized.

In the Southern Mountain Pacific group, 12.5 per cent. instead of the 25 per cent. so authorized.

On interterritorial traffic, except as otherwise provided herein, 20 per cent. instead of 33⅓ per cent. so authorized.

These reductions become effective July 1.

Not Certain How Clay Products Will Benefit

The reductions affect all commodities except agricultural products, which enjoy a cut of 10½ per cent. made last fall for Western hay and grain, and the voluntary reduction of ten per cent. made by the railroads last January 1.

It is not known at this writing whether or not the recent decision of the I C. C. with respect to the brick rates will be included as part of this ten per cent. reduction. Some of those in touch with the situation, however, are hopeful that this decrease will be in addition to the decrease which came under the ruling of I. C. C. docket 10733.

It is expected that the Interstate Commerce Commission decision will be followed by a decision affecting the wage question, a subject which is now being considered by the United States Railroad Labor Board.

In effect the decrease in freight rates is a reduction of the recent increases granted the carriers in August, 1920. The fluctuation of rates, as expressed in percentages, follows:

	Prior to Aug., 1920	After Aug., 1920	After July 1, 1922
Eastern and Illinois	100	140	126
Western (and Illinois with western)	100	135	121½
Southern and mountain	100	125	112½
Interterritorial	100	133⅓	120

In explanation of the reason for adopting a horizontal method of reducing freight rates, the commission said that, while alterations in price levels had unequally affected different commodities, "the needs of commerce cannot be met if rates are to fluctuate with market prices of commodities."

Its conclusion was that "reduction should be made generally upon all commodities in substantially equal ratio."

Cuts $400,000,000 from Revenue

Estimates as to how much the rail cut will lop off the freight bill that is unloaded on the consumer are difficult to make. However, in 1921 the freight revenue of the railroads was $3,907,000,000. Ten per cent. off this would be approximately $400,000,000. This practically means an increased buying power of that sum for the nation.

Railroad executives are not particularly happy over the ruling, as might be expected, but manufacturers, merchants and bankers are almost a unit in expressing the belief that the reduction in freight rates will stimulate business and that the loss from the reduced freight revenue will be more than offset by increased traffic on the railroads.

Clay product manufacturers will at least be affected in the reduced cost of their coal, which, of course, is a very large item in their production cost. More than this, the increased buying power of the public, which will be one of the results of the reductions, and the better business conditions which it will create, will all tend to even increase the present excellent situation in the clay industry.

Illinois Lets a Brick Highway Contract!

After several years of exclusion and for the first time in a long while, paving brick has come back into its fold of state highway pavements. The Illinois State Highway Department has finally let a contract for a brick paved state highway. This is heralded as one of the biggest features of the year in the paving brick field. The pavement will be a part of the state road system near Anna, Ill., which is in the southern part of the state. The contract calls for 13.32 miles of brick pavement, asphalt filled, on a ten-inch novaculite base with a one-inch sand cushion. Novaculite is a crushed flint rock which is used instead of crushed limestone or slag.

The contract was let at a price which meets Governor Small's requirements, who in the early spring of this year set $30,000 a mile as the maximum amount the state will pay for pavements. The Murphysboro (Ill.) Paving Brick Co. will furnish the brick for this pavement, which runs to over 5,000,000. Brick and Clay Record hopes to have more details concerning this road to be published in a later issue.

START RESEARCH SCHOOL IN AUSTRALIA

The Australian Commonwealth is about to establish a research center at the Brunswick Technical School, and is taking over the plant of the Brunswick School of Pottery for the purpose of conducting experiments and tests on Australian materials. It is expected that this will hasten the development of clay products in Australia.

R. M. A. TO MEET IN ATLANTIC CITY

The next meeting of the Refractories Manufacturers' Association will be held in Atlantic City, N. J., on Thursday and Friday, June 28 and 29. Headquarters will be at the Traymore.

Rytt's Novel Way of Selling Novel Brick

How Irving A. Ryttenberg Used to Advantage a Much Abused Form of Advertising, the Circular Letter—Campaign Has Made Dixie Texture and Airedale Brick Famous in Architectural Circles

CIRCULAR LETTERS form a large part of your mail each day. All of them are more or less alike—in this respect. They usually are accorded the same disposition, the waste basket, without your having read past the first paragraph. Hence the effectiveness of the letter is usually lost. It was a wasted effort.

Is the circular letter, then, a failure? Not if it is properly handled. It must never be commonplace or stereotyped.

Obviously then, the thing to do is to create something unusual, something that instead of finding the waste basket will compel attention and be read. People are always on the lookout for the unusual, the "different," and in any advertising which may be done, be it thru a circular or any other form of publicity, originality should be a fundamental of the message. Originality alone, however, will not do it, you must have a product to back up your advertising.

A form of letter writing which has been condemned by many expert advertising men and which has been tried repeatedly with detrimental results, is the humorous, facetious or "clever" letter. Apparently there is a place even for this kind of advertising. It can be made to bring excellent results if used correctly. In fact, a face brick manufacturer has succeeded in doing this very thing. It remained for Irving A. Ryttenberg, president of the Sumter (S. C.) Brick Works to wage a successful "humorous" campaign in selling his famous Dixie Texture brick.

Architect Hard Man to Get to

Mr. Ryttenberg was up against a difficult problem. With a product distinctly different from the ordinary face brick manufactured he had to devise ways and means of bringing it to the attention of the architect. Now the architect is admittedly one of the hardest of all prospects to approach. He is as a rule a combination of business man and artist, temperamental, particular, and most of all unapproachable. There are few business or professional men who find themselves to be the objective of so many advertising campaigns, so many enterprising salesmen and so many circular letters as the architect. It is therefore natural for him to encase himself in a shell of reserve which ordinary sales efforts do not pierce.

Another problem which Mr. Ryttenberg had to face was that of selling brick outside of the immediate easy shipping radius, of increasing the scope of his market from the local and near local to the entire country. It was decided to employ what is known as direct mail advertising, a letter directly to the prospect. The following letter is the first product of the series and was designed with a view to getting past the person who opens the mail and to reach the desk of the "Main Guy." The bold face type was written in red in the original letter.

May the Good Lord save this letter from the waste basket until you have read the first paragraph.

Mr. Archi Tect,
Somewhere, U. S. A.
Dear Sir:

We divide Architects into four classes, real Architects, regular Architects, mediocres and 2x4's. If you are so unfortunate as to belong to either of the latter classes, you will not be interested in our product and will be wasting time to read further, as it takes a **REAL** Architect to appreciate something as new and different as our brick.

200 years B. C. a Chinese philosopher said, "there is nothing new under the sun."

Somewhere else we have heard about it's being as difficult for a camel to go thru a needle's eye as a rich man to enter Heaven or a Brick Manufacturer to get beyond the chief draftsman and reach the **"MAIN GUY"** in the Architect's office. We have shown both to be fallacies and with your permission will prove it to you.

An Architect's time is valuable and knowing this I don't waste it. Those considered most difficult to approach are easiest for one who has something really worth while to offer. The bigger they are, the harder they fall for our **Dixie Texture Brick.** These brick are so different and have none of the mechanical sameness which you have always regarded as a necessary evil of quality brick.

In addressing this letter to you, I know just as much about you as you know about me, but if you are what we hope you are, you are going to know something of our unglazed flashed brick. You never heard of such a thing before, have you?

One man wrote us they reminded him of an Airedale dog, they were so darned ugly they were beautiful, and then sent us an order for a $100,000.00 residence. Please classify yourself by letting us know if you think you will be interested. We will send you samples to prove there is something new in brick, and we have it.

Yours very truly,
(Signed) Ryttenberg,
President,
Sumter Brick Works.

Evidently these letters struck a chord in the architects' peculiar makeup, which responded favorably. If replies were the only criterion of the success of this letter it must for that reason alone have been considered a winner. The nature of the replies and the goodwill expressed in them indicated that "Rytt's" letter had struck the mark. Witness the following reply from an architect in Georgia:

Gentlemen:

In reply to yours of the ninth.

Without attempting to decide my classification according to your schedule, I would like to inquire if you are able to make quality brick and quantity prices.

I might say that my impression of the "dope" from the average brick manufacturer is that he is quite familiar with the male of the cow species. There are also a lot of people from Missouri.

It is interesting to see that behind the levity and wit (and attempted wit) in most letters from the architects there is an appreciation of the actual motive behind "Rytt's" letters, and requests for prices and samples are numerous. Another interesting reply to the first letter was received from an architect in New York.

Dear Sir:

Thanks to your good wish, the Good Lord has saved your letter of July 27 from the waste basket.

For goodness' sake, let me have a sample of those black beauties which the "name implies", or maybe they are of the screaming bandanna type, or are they just black and white, suggestive of cotton picking?

According to your description, I cannot see how any Architect of any of the four classes could have existed this long without possessing some of them. How did it ever happen?

Having thus startled the architect out of his composure and made him emerge from his shell, the advantage was folowed up a little later with a second letter. This letter had the same general purpose as the first one, but with it it was hoped to elicit replies from those who had failed to respond to the first. The letter makes a subtle appeal to the architect's artistic sense of originality and his wish to be "different."

The Good Lord did not save our first letter from the waste basket. Will the Devil get this one too?

Mr. Archi Tect,
Somewhere, U. S. A.
Dear Sir:

Altho everyone did not reply to our advertising manager's first attempt, we received many answers. Most of them were in an appreciative vein, full of good humor. We believe that "humor" is one of the greatest gifts to man. Since we could not reach you thru this sense, let us try another.

Do you encourage originality and individuality in your drafting rooms? Then why not among the manufacturers who furnish you material? We have something that is original and distinctive as well as having beauty and individuality.

Our Brick bear the same comparison to the quantity production of other plants, as a fine tailor made suit to the sweat shop production. Who is your tailor?

Do we need references? Well—we have the best in the U. S. A. Do you want them before condescending to accept an introduction to our **Dixie Texture Brick?**

Since we are shipping brick as far as Boston and Milwaukee, we can reach your city too.

Yours very truly,
(Signed) Ryttenberg,
President,
Sumter Brick Works.

To this letter many interesting replies were received. Here is one from one of the largest firms of architects in Chicago:

Dear Sir:

We have your good letter of August 25, and if the Devil got your first letter and you manufacture fire brick, you may in time receive an order from him. Pending receipt of this order, you might send us one sample of your brick, together with prices.

Another letter, received from a Washington firm, is an expression of goodwill and friendliness which can not help but be expressed in dollars and cents when the opportunity presents itself:

Dear Sir:

I am in receipt of yours of the 19th. In reply wish to state that this letter does not apply to me at all. I did not answer your first letter because at this time none of my work calls for brick such as you manufacture.

Your first letter did not reach the waste basket, as it was so darn good and wholesome I passed it around the office and drafting room for everybody to read and enjoy. It is gratifying to get letters of this character, and I hope you will keep sending them. I shall not fail to get in touch with you when opportunity arrives, but my work at present is running to remodeling of banks and residences, and most of the new buildings are of stone.

Go to it, old top. Fire out all this kind of stuff and business is bound to come. You will notice that the middle initial of my name is "L", which stands for laughter. Yours for success.

A third letter, designated the "Peptimist" letter, was sent out to follow up the second one. Its purpose was chiefly to remind the architect that "Rytt" was still alive and to keep Dixie Texture brick in his mind's eye.

**To frown you use 64 muscles but only 13 to smile!
Smile, it won't hurt you—much!**

Mr. Archi Tect,
Somewhere, U. S. A.
Dear Sir:

An Optimist is one who sees the doughnut.

A Pessimist sees only the hole.

A **REAL** Architect sees Beauty in **Dixie Texture Brick.**

A Peptimist goes in the back door to get to you, if your front door is shut; the window, if the back door is shut; the chimney, if the window is shut and blows off the roof if the chimney is shut.

Is your roof well anchored? We are trying to reach you.

Yours Very Truly,
(Signed) Ryttenberg,
President,
Sumter Brick Works.

The next letter oversteps all bounds of conservative advertising and literally compels the architect to take notice. Altho a daring piece of literature, it was made fairly safe by the preceding letters, which tended to put the recipients into a mood of "What's next?", and to prepare them for most anything. In this letter Mr. Ryttenberg compares architects to women and voices his opinion in no uncertain terms.

**Breathes there a man,
With soul so dead (to humor)
Who to himself, hath not said,
Is Rytt a nut, or a dye?**

Mr. Archi Tect,
Somewhere, U. S. A.
My dear Archi:

Why are Architects like Women?

Because you can't get along with them, and you can't get along without them. That's what the other fellow says.

I say; because they are temperamental, artistic, erratic, faithful, fickle, have a good eye for color and the longer you live with them the better you like them. I get along fine with both because I don't tell them how to run their business, what they should do, how it should be done, etc., etc.

Yes! I'm married.

Why are Dixie Brick like Women?

Because their faces are their fortunes.

We claim this difference. The colors on **Dixie and Airedale** faces do not come from the drug stores or paint shops. Their complexion is just what nature intended it should be. Nothing artificial about them.

As man to man, without consulting your stenographer, which do you admire most? Do you get me? If so, "tell me not in mournful numbers." **Ce ne fa'rien.** It's,

Just Me,
(Signed) Ryttenberg.

"AIREDALE BRICK, LIKE AIREDALE DOGS, SO DARNED UGLY THEY ARE BEAUTIFUL."

This letter is the first of the series to attempt a description of the brick itself and to give the architect an idea of what he might expect when specifying Airedale or Dixie Texture brick. The preceding letters dealt in generalities only and their chief purpose was to gain an entree into the private sanctum of the man who speaks the final word.

This was followed by what Mr. Ryttenberg designated the "Walrus" letter. It deals very frankly with the texture and color of the brick and is a good description of them, but always in the same vein, somewhat arrogant, but extremely interesting and amusing.

"The time has come," the Walrus said,
"To talk of many things:
Of shoes and ships and Dixie Bricks,
Of cabbages and kings."
Apologies to Mr. Lowell.

Mr. Archi Tect,
Somewhere, U. S. A.
My Dear Archi:—

Visualization is an Architect's greatest asset.

To what extent do you possess it? Can you picture a building of as many shades of brick as were in **Joseph's Coat?** If so, what color mortar would you use?

Another question please. What kind of Texture do you prefer? Do you like the uniform surface, the mechanically perfect one or the one with horizontal or vertical lines.

Our Brick are not in these classes. The texture varies in each brick. There are **no lines** and **no** two bricks are exactly alike. They are a reproduction of the

Old English Hand Made Article.

Would you prefer having our dealer in your city call on you and quote price, or shall we send samples to your office direct? They are good for door stops if nothing else.

You are about to ask about the price.

Neither Kress nor Woolworth are interested in this plant nor are we listed in Sears, Roebuck catalogue.

Like yours, our charges are reasonable and commensurate with the services rendered.

That's a good line to come from

Just Me,
(Signed) Ryttenberg,
President.

The Brick with Class! In a Class, All its own. From "WAY DOWN SOUTH IN DIXIE."

The "Walrus" letter as well as the two following ones were received and read with the same interest and eagerness as the preceding ones, in spite of the fact that the list had grown so big it was impossible to continue sending them out addressed individually to each architect, but they were printed on Sumter Brick Works letter heads. Apparently the letters had made such a favorable impression that even the knowledge that they were being circularized in great numbers did not detract from the interest of the architect. The following two letters are the latest that have been sent out:

Architectural Love Letters have an Objective. It is not Facetiousness.

Mr. Archi Tect,
Somewhere, U. S. A.
My Dear Archi:—

Selling Face Brick to an Architect is Like Kissing a Girl. WHY?

Any man with sufficient strength can grab, hold and kiss a girl **once.** He may get away with a **scratched face** or a **flashed eye** but he can never come again, not even to the house.

The proper way to sell an Architect is to court him as you would a girl, showing the individuality, originality or any other qualities you or **your product** may possess and, by arousing his interest and curiosity, create a desire for a sample.

If your kisses or samples are above standard, you will **always** be welcomed and an invitation, to deliver stock, will be forthcoming.

It has been our aim to create this interest and desire on the part of the Architects to see our product. As the replies and commendations on our brick are received, we are gaining confidence daily and are assured of the fact that our brick are what we claim for them.

If for some reason you have delayed answering our letters or have not seen our product, don't wait until all dates are filled and expect to **"butt in"** and get an engagement.

Come on, now, let's hold hands a little bit! You won't have to kiss us.

No married man should try to prove this theory.

By advice of,
(Signed) Rytt,
Grand Convincer of the Ancient and Honorable Order of Skeptics.

The high yaller gal rides in Automobiles,
The high browns ride the trains,
Poor black gals ride old gray mules,
But she gets there just the same.
—Literary Digest, March 18th.

Mr. Archi Tect,
Somewhere, U. S. A.
My Dear Archi:—

We don't draw the **negro color line** in our labor or in our product, nor do we allow any **poor white trash** to mingle with either.

You have asked me a number of times to tell you about the colors of our brick but I could not find a fitting description until I read "personal glimpses" in the above publication. At our plant we have **every shade of negro and every shade of brick,** including high yaller, pleasing, teasing, tantalizing, bronze, chocolate, midnight and stove pan, with a couple of pock marked, albino and cross breeds thrown in.

Fortunately, they are all natural colors, because there is one thing in which we can see no beauty, namely, a painted, penciled, powdered chorus girl **in the day light.** Likewise, a stereotyped, artificially colored brick.

Now Archi, since we are well enough acquainted to call each other by our first names, let's make it **"no trumps." That calls "a spade a spade."** You have intelligence and judgment enough to know that behind all

the levity in our correspondence there is bound to be some substance. You should realize that ours cannot be "the same old brick" with a different name and a different advertising manager. If we were not sure we had something really worth while and really beautiful and artistic, we could not afford to joke about it and ridicule it ourselves, as it were.

We know you are from Missouri and have to be shown. When you give us the opportunity, that job will be assigned to

(Signed) Rytt,

The man who hits one success by accident is always trying to hit another by preparation.—Strahan.

Mr. Ryttenberg's letters have been the subject of much criticism among advertising men, some of them commending and others disparaging. Whatever may be the opinion of critics on such an advertising campaign, there is one thing that can not be gainsaid, it has brought results. Not only that, but "Rytt's" letters have put his name and that of his brick on the tongues of big architects all over the country.

Mr. Ryttenberg characterizes his campaign as follows:

"The brick manufacturers as a rule spend so much of their time, energy and gray matter in trying to produce a good brick and reduce the cost of manufacturing and spend very little time in judicious advertising that would bring them good results. It is all well and good to take the dignified stand that some of them do, but if they would try to do something original and distinctive to call the architects' and owners' attention to their brick, they would get a great deal better results for much less money."

Certain it is that Mr. Ryttenberg with his unique letters has startled conservative advertising men, who have condemned the "humorous" letter as having no place in business. What men are seeking now more than ever is a departure from the commonplace, the hackneyed, and if you can offer them that you will get their attention. Advertising is the first place in which the business man looks for originality, unconsciously, perhaps, but he invariably will stop to investigate the unique. Since advertising is about the only way we can reach most of our customers, isn't it just possible that this story may convey a valuable lesson?

* * *

NEWSPAPER ADS PROMISE BIG RETURNS

An activity that is being undertaken by the National Paving Brick Manufacturers' Association, which is apparently unique and promises wonderful returns, is the advertising campaign in a local newspaper, conducted by the association, and financed by the Cleveland Brick & Clay Co., the Collinwood Shale Brick & Supply Co., the John Kline Co., and the Metropolitan Paving Brick Co.

The purpose of the campaign, according to Stanley A. Knisely, economist of the association, is to educate the public and the interests chiefly concerned in the utility and general desirability of brick as paving material. At best, serving public interests is a difficult job inasmuch as the political angle enters into the situation so strongly. Hence it is that by general education of the kind done by this advertising, public opinion may be brought to understand the advantage of the slight additional cost of brick.

A similar campaign is being conducted by manufacturers who serve Florida, and advertising is being run in fourteen newspapers in that state.

* * *

SELECTED LIST OF GOOD BOOKS

Scovell, Wellington & Co., accountants and engineers of Boston, have announced the publication of a list of 400 selected professional and business books, representing the best literature on such subjects as accounting, industrial engineering, factory management, commercial law, economics, general business, advertising and selling, handbooks of various industries, and related business topics. A list of publishers from whom the books may be obtained is also given. Anyone who is interested in one or more of these subjects, or who desires to establish a business library for himself or for the office, should find this list worth while.

* * *

From Less Than 11 Per Cent. to More Than 24 Per Cent.

BRICK has recently been printed on more pages of liter-ture,—in a greater number of different kinds of magazines, ooklets, and so forth, than ever before, even to preceding he time of Nebuchadnezzar. As a result, brick has been mprinted in the minds of thousands more people—rospective builders;—more than this, it has been spelling eauty, comfort, durability, increased value and so forth in he walls of a greater number of American homes than ever eretofore.

ore Attention for Brick

National magazines—especially such well known woman's apers as the Woman's Home Companion and the Ladies ome Journal, have been publishing splendid articles inluding plans for brick houses, together with a general escription of the home, in recent numbers.

The Woman's Home Companion reaches some 1,700,000 eople per month. Brick monopolized the home building epartment of the April and May issues of that paper. he Ladies Home Journal, which reaches a similarly large number of readers, has also featured brick houses. It is difficult to place any definite value on these articles, but we dare say that for a similar effect upon the public they are equivalent to advertising that would cost fully over a hundred thousand dollars.

One of the best manifestations indicating the tangible results from advertising brick is from a letter written by Frank Braucher, advertising manager of the Crowell Publishing Co., publishers of the Woman's Home Companion, American Magazine, and others, who in writing to the advertising agents of the Common Brick Manufacturers' Association, states:

> "It may interest you to know that in the May issue of the Woman's Home Companion a brick house will be shown in full color as part of this same house-building series.

Why Brick is Getting Publicity

"I wonder if I can make a statement that would not be misunderstood? As you well know, brick house construction is nearly always overlooked in general women's magazines that pay any editorial attention to housebuilding. I think the attention the editors of the Companion are giving to brick houses is one of the direct results of the advertising of brick manufacturers. Not that the editors turned their attention to brick houses because of the brick manufacturers' advertising in the Woman's Home Companion, but **because the continued advertising on the part of these manufacturers has created favorable interest and public opinion in favor of brick construction thruout the country, which the editors felt and recognized.**

And the Cumberland (Md.) Times Says:

A great building show has just been held in Cleveland, where there is a brand new "Public Hall". . . . What interests the spectators most? It's hard to say whether they love best the fascinating little models of houses set in green lawns with miniature flowers and real trees and doll tennis courts, or . . and so forth. But what the people kept coming back to, over and over again, says an observer, was the brick. And what a thirst for learning was displayed! How they go together, and how the different walls are made, the double brick, and the hollow tile faced with brick, and the brick facing over a "frame" foundation, and the different kinds of brick, and whether it really is cheaper, as the brick dealers insist, to build of brick than of wood. One would have imagined that half northern Ohio lay awake nights just longing to know about brick.

Not a bad sign, at all.

"There can be no connection between the fact that the brick manufacturers advertised in our columns and this attention to brick construction, but there is a very definite relation between the fact that they as advertisers created wide and popular interest in brick construction, which reflected itself back to the editors."

What About the Public?

If brick advertising, both that of the C. B. M. A. and the A. F. B. A. is having this effect upon the editors of the home building departments in national magazines, what effect must it be having upon the millions of readers who are now having the story told them thru stories, advertising and other publicity month after month? This is well answered by a contest which the Ladies Home Journal architectural department ran in October of last year on house plans. A maximum prize of $25 was offered for the best house plan, this sum being offered for the purpose of eliminating any contractors or professional architects' plans.

The result of the contest was that 6,000 plans were submitted in the last two months of 1921. These plans were the ideas of house builders or prospective builders—in most cases the ideal home or dream house that every family plans hopes and saves for, to erect.

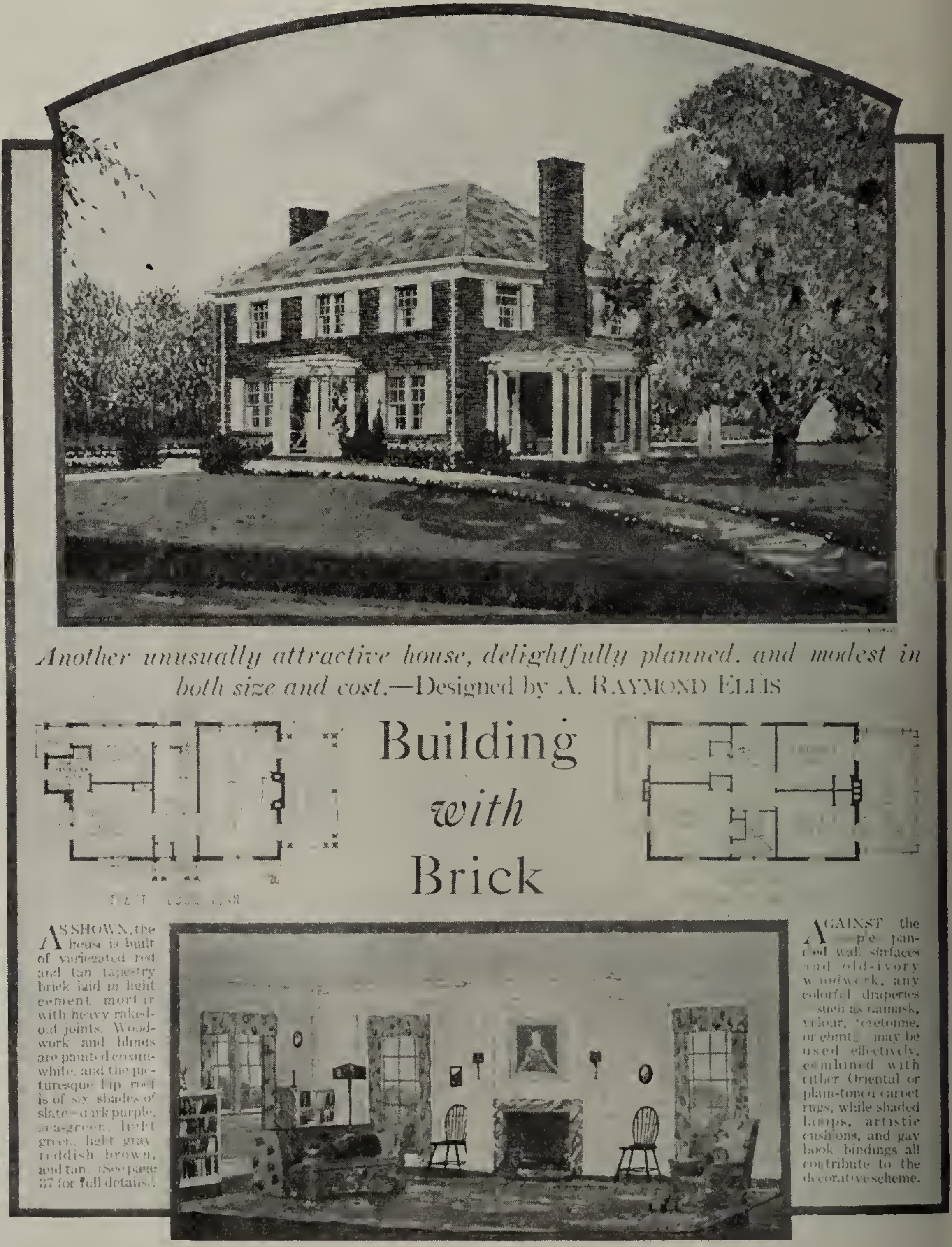
With these plans the contestants wrote letters, giving among other details their preferred materials for the home they expected to build. 1,999 perferred frame construction; 1,722 elected stucco; 37 named cement block, and 1,205 chose brick. This means that over 24 per cent. intend to use brick, which represents a considerable increase over the 11 per cent. which in years past did not build of lumber.

Why This Growing Demand for Brick?

In a supplementary report William Draper Brinkloe, who acted as supervising architect of the house plan contest, made the following statement: **"The preferences for different materials are very significant. The growing demand for brick is, I believe, a direct result of the Common Brick Manufacturers' Association campaign; a great many contestants refer to the new type of hollow wall featured in that campaign."**

The plans and preferred materials of these 6,000 home builders may be regarded as significant of the thoughts and ideas of builders all thru the country, since they represent plans from every state in the union, every section of the country, and practically every strata of home builders.

Is this not a striking and tangible bit of evidence as to the effectiveness of brick advertising? **Brick advertising does pay.**



Another unusually attractive house, delightfully planned, and modest in both size and cost.—Designed by A. RAYMOND ELLIS

Building *with* Brick

AS SHOWN, the house is built of variegated red and tan tapestry brick laid in light cement mortar with heavy raked-out joints. Woodwork and blinds are painted cream-white, and the picturesque hip roof is of six shades of slate—dark purple, sea-green, light green, light gray, reddish brown, and tan. (See page 37 for full details.)

AGAINST the taupe paneled wall surfaces and old-ivory woodwork, any colorful draperies such as damask, velour, cretonne, or chintz may be used effectively, combined with either Oriental or plain-toned carpet rugs, while shaded lamps, artistic cushions, and gay book bindings all contribute to the decorative scheme.

Entire Page Reproduced From the May Issue of the Woman's Companion. Both Top and Bottom Pictures Were Reproduced in the Companion in Full Colors.

Business Briefs and Trend

INDUSTRY CONTINUES GAINS

May, 1920, is the date usually associated with the beginning of the recent period of depression. It was in this month that the general level of prices began to decline. During the 12 months that followed prices on the average dropped 50 per cent. It has required the better part of another 12 months for business to catch its breath after that memorable slide. That this has been accomplished and that business is rapidly adjusting itself to the lowered plane is further emphasized by the figures received by the Department of Commerce during the first three weeks of May, 1922.

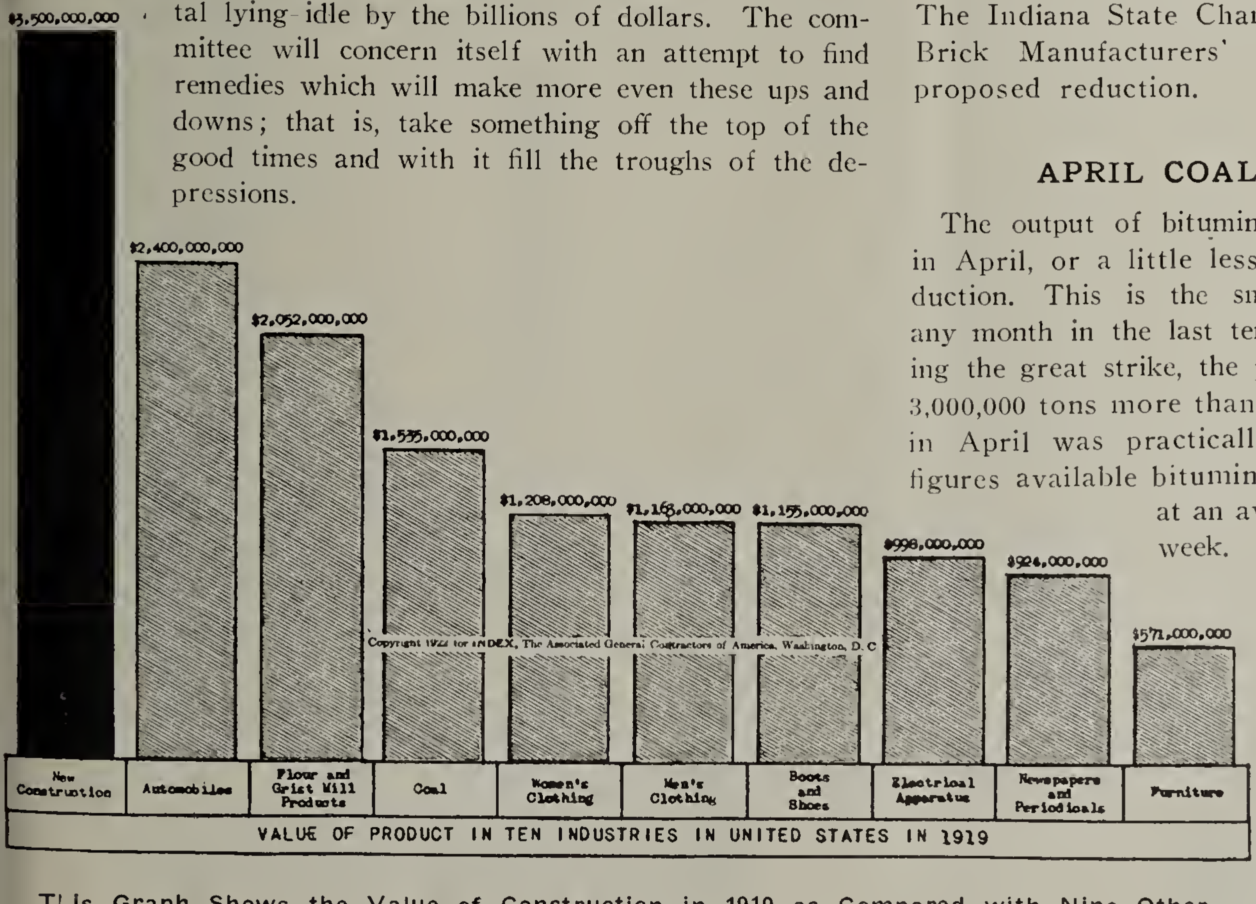
Commercial and industrial movements in April, so far as reported, show, for the most part, a steady gain, altho some reverses, such as in cotton consumption, are noted. The decline in coal production, due to the strike has so far caused no interference with industry and very little uneasiness. Iron and steel production held its new level in April and the marked increase in the unfilled orders of the United States Steel Corporation indicate more active buying. Prices were steadier last month, with small increases in many commodities. Reports indicate that retail trade is improving.

⁂

STUDY BUSINESS CYCLES TO PREVENT DEPRESSIONS

Following the suggestion of the President's Conference on Unemployment last autumn, the Department of Commerce has appointed a committee to make an analytical study of the business cycle and to collect statistics and facts as to the methods for offsetting the bad results of those periods of expansion and depression which have been characteristic of our industries.

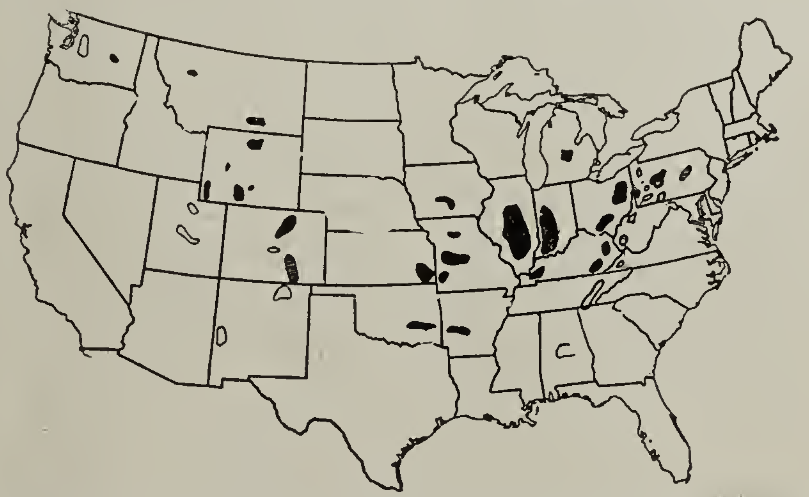
Four times in a single generation there have been cycles of depression following booms; in 1921, only now just beginning to disappear; a similar situation in 1914 and 1915; again in 1918, and back in 1894-1896. During these four situations unemployed were reckoned by the millions and capital lying idle by the billions of dollars. The committee will concern itself with an attempt to find remedies which will make more even these ups and downs; that is, take something off the top of the good times and with it fill the troughs of the depressions.



This Graph Shows the Value of Construction in 1919 as Compared with Nine Other Industries.

M. & N. A. R. R. RAISES RATES

The Missouri & North Arkansas Railroad has been authorized to raise freight rates at once as follows: five cents per hundred pounds on brick, grain and petroleum products, cement, and fertilizer; three cents per hundred on ties; 25 per cent. on salt, packing house products and merchandise, and $1 per ton on coal. The order states that the question involved appears not to be one of profits, but whether or not the property can be maintained in operation.



All Black and Shaded Areas in the Above Map Indicate Regions of Union Coal Mines Not Now Working. The White Outlined Spaces Denote Non-Union Mines Now in Operation.

R. R. RATE REDUCTIONS QUASHED

The Interstate Commerce Commission has found the proposal of the Chicago & Eastern Illinois Railroad to reduce interstate rates on brick and articles taking the same rates in carloads from Danville to East St. Louis, Ill., not justified, and accordingly the suspended schedule is canceled. The Indiana State Chamber of Commerce and the Indiana Brick Manufacturers' Association protested against the proposed reduction.

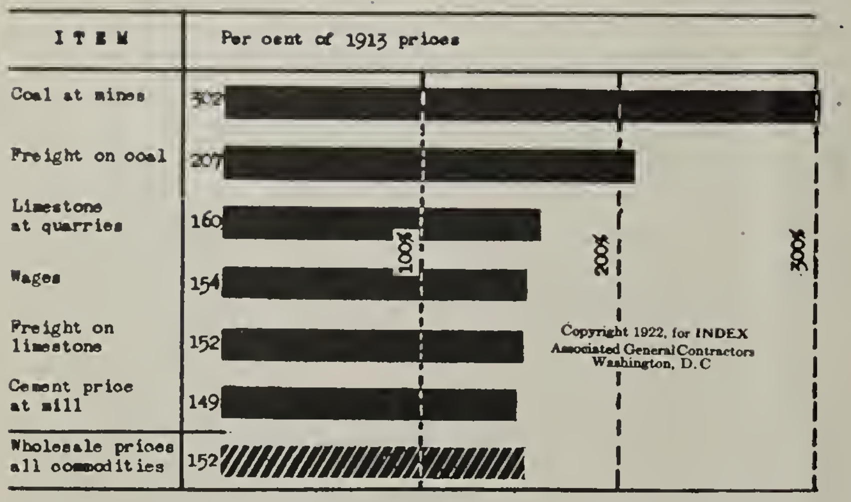
⁂

APRIL COAL PRODUCTION DROPS

The output of bituminous coal amounted to 15,780,000 tons in April, or a little less than one-third of the March production. This is the smallest production of bituminous for any month in the last ten years. In November, 1919, following the great strike, the production totaled 18,688,000, or about 3,000,000 tons more than last month. Anthracite production in April was practically negligible. According to latest figures available bituminous production is being maintained at an average of more than 4,000,000 tons per week.

The output of beehive coke dropped from 732,000 tons in March to 528,000 tons last month; by-product coke, on the other hand, increased 90,000 tons over March, with a total of 2,227,000 tons in April.

Little effort has been made by either the operators or the unions to come to an agreement. Neither industry nor the public is as yet suffering because of a lack of coal.



Present Prices of Cement and Costs of Cement Materials and Labor Compared with Average Level of Wholesale Prices, in Per Cent. of the 1913 Figure.

MINES PRODUCE BULK OF R. R. TONNAGE

That the railroads of the United States receive from mining nearly six times as much freight as from agriculture, nearly four times as much as from manufactures, and between six and seven times as much as from the products of forests, is developed as a result of a study of the classification of railroad freight tonnage recently made by W. W. Adams, mine statistician of the Bureau of Mines. The figures show that mining products constitute about 56 per cent. of the total tonnage from all sources. The tabulation was confined to railroads having an annual revenue of at least one million dollars, and only freight originating on the roads was included.

In a recent year, the freight tonnages from various sources were as follows:

	Tons	Per cent. of total
Products of agriculture	115,033,319	10.49
Animals and products	35,493,662	3.24
Products of mines	589,950,958	53.82
Products of forests	94,075,639	8.58
Manufactures	168,759,153	15.40
Miscellaneous	92,798,540	8.47
Total	1,096,111,271	100.00

A large tonnage derived from mineral products is included in the figures shown under the heading of "Manufactures."

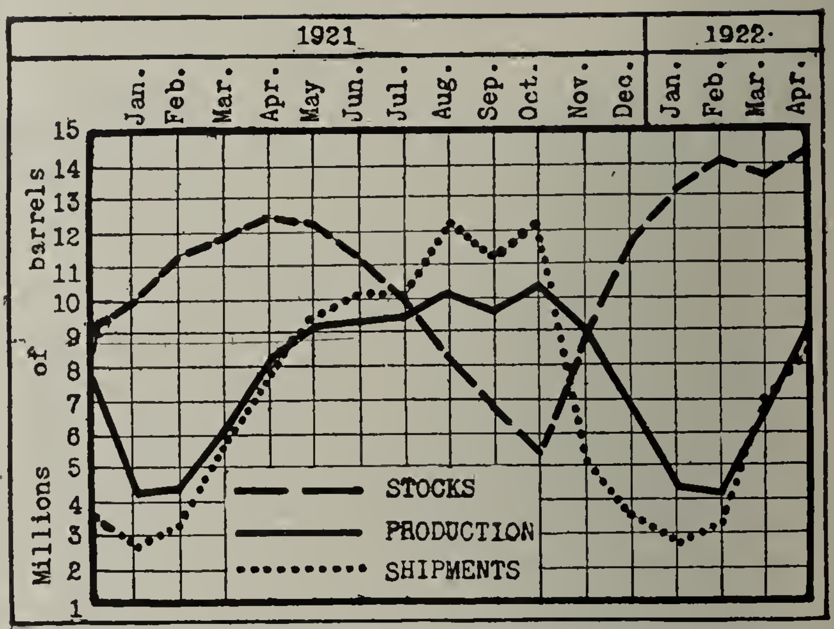


Chart Showing Stocks, Production and Shipments of Portland Cement in 1921 and 1922.

TO FIND FOREIGN REFRACTORIES MARKETS

The Department of Commerce has issued a questionnaire to more than a thousand consuls and commercial attaches in practically all parts of the world, in an attempt to determine the possible markets for American-made refractories. The Refractories Manufacturers' Association collaborated with the Bureau of Foreign and Domestic Commerce in the preparation of the questionnaire.

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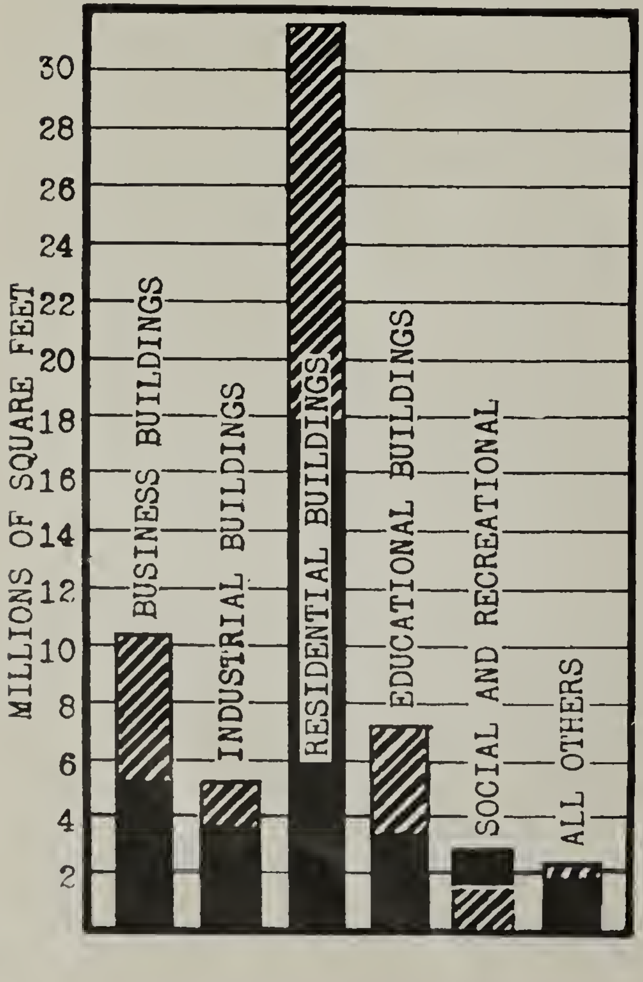
196,512 CARS PRODUCED IN APRIL

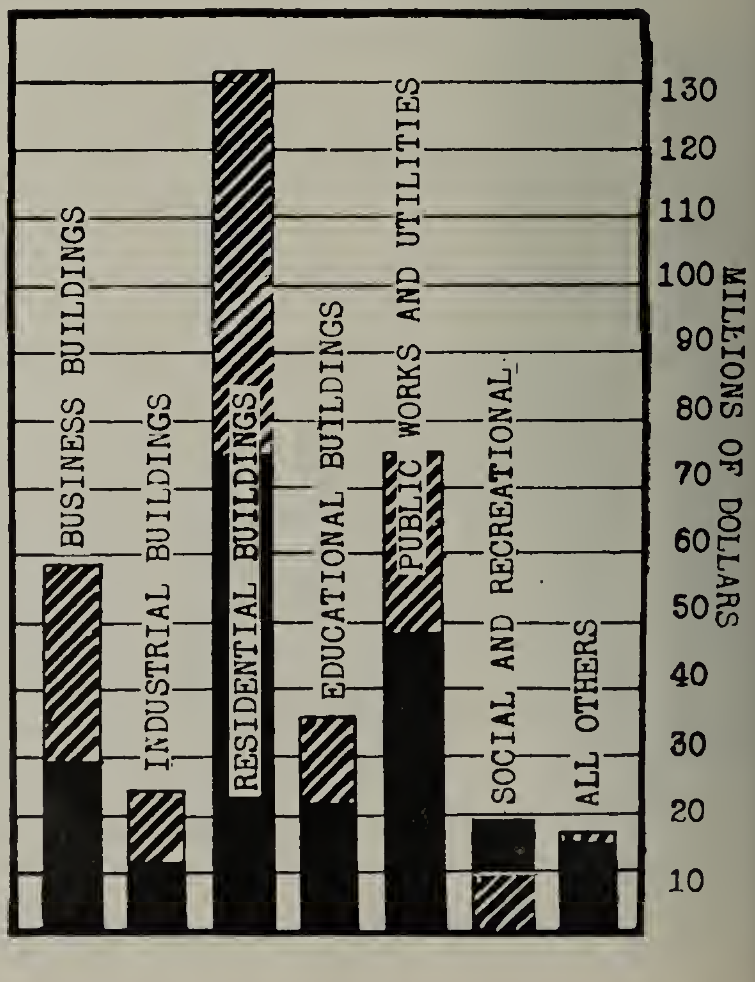
Reports received by the Department of Commerce show that new records were made in the output of both passenger automobiles and trucks in April, compared with the preceding ten months for which figures are available.

With the reports lacking for only a few small companies, the total April production of passenger cars amounted to 196,512, or an increase of nearly 30 per cent. over the March production of the identical firms. The April truck production totaled 21,944 machines, compared with 19,449 from the same firms in March.

The following figures give the production for identical firms for the past four months. A few firms have not yet reported



The graph on the left depicts the amount of building contracts awarded in millions of square feet, segregated in the different types of buildings. On the right is shown the amount of building contracts awarded in millions of dollars. The black portions in the graphs indicate contracts awarded in April, 1921, and the hatched sections show the increase or decrease for April, 1922. These figures are given out by the Department of Commerce.



for April, hence the figures for the earlier months are slightly less than the totals previously given.

1922	Passenger Cars	Trucks
January	81,638	9,204
February	109,039	12,968
March	152,647	19,449
April	196,512	21,944

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C. N. C. P. A. SETS MEETING DATE

A meeting of the executives of the Canadian National Clay Products' Association and the Western Ontario Clay Workers' Association was held in Toronto on May 12. A joint convention will be held at Hamilton on January 24, 25 and 26, 1923. These dates which had been suggested were confirmed at this joint executive meeting. Following the meeting the visiting manufacturers from outside the city were entertained at dinner by the Toronto members. The executives congratulated the Technical Education Committee on the work being done to establish a course in ceramics at Toronto University.

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TO DEDICATE RUTGERS CERAMIC SCHOOL

The New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society is perfecting plans for the dedication of the new Ceramics Research Station, at Rutgers College, State University of New Jersey, New Brunswick, during the annual June commencement period at the institution. A program is being arranged, calling for the ceremony at 3 P. M., Tuesday, June 13. The addresses will be limited to a few prominent speakers, headed by R. H. Minton, president of the association, which, thru its untiring efforts has made the proposed building an actual reality, and a monument to the clayworking industry of the state. A number of national figures in the ceramic field in different parts of the country are expected to be present at the event, and invitations are being mailed out.

At a meeting of the Executive Committee of the association on May 22, it was voted to hold the annual summer meeting at Trenton, N. J., on the day following the Research building dedication, designating June 14, and the Country Club as the time and place of the gathering. Under this arrangement visitors to the ceremony of June 13 will be enabled to be present at the summer meeting, probably not possible otherwise. The Program Committee, of which Fred Whittaker, General Ceramics Co., Keasbey, N. J., is chairman, is arranging a morning session devoted to sport and festivity, followed by a luncheon at 1 p. m. and a business session at 2 o'clock. On account of the limited time, the technical papers will be restricted and only of brief extent. It is believed that a general discussion of pertinent ceramic topics will be opportune at this time, and provision will be made accordingly on the program.

The Building Situation

DESPITE THE FACT that contracts awarded in the 27 northeastern states covered by the F. W. Dodge Co.'s statistics were greater in April than in any other month, reports of permits issued during the same month in 42 cities of the United States were $54,000,000 less than in March. New York City is to blame for this tremendous drop, reporting $65,000,000 less in permits than for the previous month. The expiration of the tax exemption law was undoubtedly a big factor in this big reduction.

In the 42 cities in which statistics were compiled by the American Contractor, April permits show a total of $164,626,564 as against a total of $218,680,581 for the previous month. The total valuation of permits issued in some 200 cities in the country is $212,735,607. Leaving New York out of the calculations permits for April show an increase in valuation over March.

New England Continues High Pace

Marked advances in construction work in the New England district continue, and every city of appreciable size is feeling the impetus of spring demand. Carefully compiled figures for April operations show enormous increases in a number of cities, not only being duplicated in May, but with every indication of rising proportions in coming months. As a result, building material markets are showing extreme activity, with prices firm and a scarcity of certain commodities in sight.

At Boston, over $8,000,000 in valuation of plans filed during April is but a forerunner of summer and fall construction in this locality; this is close to eight times the volume of building in the same month of a year ago, or a gain of approximately 640 per cent. Fall River shows an advance of over 500 per cent., with figures during the month noted of $322,000. Lawrence records an increase of 350 per cent.; Somerville, 450 per cent., and a number of the smaller communities, such as Lowell, Haverhill and Salem, from 100 to 200 per cent. in advance of this time a year ago. Springfield is also hitting a high rate in dwelling construction.

New Haven, Conn., shows an increase of over $1,000,000 in construction during the past month as compared with the corresponding period of 1921, the figures being $1,309,000, and $297,000, respectively. Portland, Me., is progressing and an 80 per cent. increase is recorded in this city.

Brick, the Feature in New York

Common brick forms the pivot of activities at New York, and the scarcity of this commodity is proving a hindrance to desired construction advances. Every barge load of material from the Hudson River yards is absorbed immediately upon arrival, and there is keen bidding in advance. Allotments are now being scheduled for days ahead. The big demand has stiffened prices to an extent of $20 a thousand, wholesale alongside dock, as compared with $18 a fortnight ago. There has been a heavy run on material from the Raritan River section of New Jersey, and so much so that there are no prevailing quotations.

The strike of brick plant employes at Haverstraw and other Hudson River points is practically broken, and about one-third of the men have returned to work. Employers have granted an advance of 50 cents a day in wages; from 500 to 800 workers are still out, asking for an increase of $1 a day. Every brick plant in that vicinity is striving to get on the producing list, and even with this situation there is every indication that existing Hudson River brick plants are no longer able to supply the demand of New York and vicinity.

Heavy Construction in New Jersey

During the first quarter of the present year, construction operations placed under way in New York, including all five boroughs, have reached a total of over $211,400,000, or about

(*Continued on page* 874)

Research is Tool Which Will Improve Refractories

IN THE AGGREGATE failures of refractories in service cause an enormous annual loss to the iron and steel industry. The extent of this loss in the case of open-hearth furnaces may be estimated by the fact that a modern furnace of average efficiency should produce not less than 310 pounds of steel per operating minute. From this it is not difficult to visualize the losses involved by the premature failure of any portion of the refractory structure of the furnace. Walter A. Hull has in part indicated a remedy for such failures, as a greater degree of cooperation between producer and consumer and the establishment of more intelligent specifications than now exist; all of which are correct. In the abstract his criticism of purchasing agents as a factor in the prevention of rapid progress toward better refractories, is justified, but their attitude is only a product of conditions, the remedy for which lies almost wholly in the hands of the direct users and producers of refractories. To be more specific, if the operating man's records were more exact in character, and his knowledge of refractories more detailed, he would be in a position to demand, on the basis of evidence, the particular grade of refractory which he had found most economical to use. With such proof no purchasing agent would refuse to purchase the material specified.

User and Purchaser Should Know Refractories

A more complete knowledge should be possessed by both the user of refractories and his purchasing agent. This, in turn, would necessitate a desired change in the selling tactics of the producer, namely, the substitution of technically trained refractory experts for the present type of salesmen who are in no position to give to the consumer the help needed in the solution of refractory problems. An interchange of knowledge, theories and experiences ultimately will bring the goal of better refractories.

There exists in the minds of users of refractories, particularly those engaged in high temperature operation, the hope of seeing developed a super-refractory, which will enable work at higher temperatures, to cut down excessive radiation losses, and lengthen the life of furnaces. In the light of present day knowledge of refractory substances, it seems that this hope can never be realized at a cost commensurate with the results obtained, and it appears advisable to concentrate efforts upon the improvement of what already exists.

Tridymite Improves Silica Brick

In the specific case of silica brick, which plays an important part in the open-hearth process, there is no doubt that improvement is essential, not only in manufacture, but in more intelligent use. A high percentage of tridymite in such brick practically eliminates the spalling and internal rupturing, which perhaps is the predominant cause of a percentage of premature failures of this refractory. The production of a more marked tridymite network is, at least, in the present state of the art only possible by long continued burning at an expense which it is claimed would be prohibitive. Whether or not this cost is based upon competitive prices dictated by purchasing agents, rather than upon what the industry could afford to pay for a brick that would probably give 100 per cent. longer service has never been specifically stated. Frequently on just such incomplete evidence many promising advances in the art are discouraged prematurely.

In the writer's own experience silica brick, burned for a long period of time, in regenerative chambers, and presumably carrying a high percentage of tridymite, have given not less than double the length of service when used under the most exacting conditions a silica brick has to meet, that of hot repair of bulkheads and walls. It does not seem probable that the use of regenerative chambers for the further burning of silica brick will ever become popular or commercially feasible on account of breakage loss and other operating difficulties. However, as a method of demonstrating what better burned brick will do it is convincing.

Furnace Design Should Be Given More Attention

The character of the quartzite employed, the method of grinding and other fabricating operations are susceptible to improvement, and on the part of the user that much remains to be done toward improving the operating characteristics of furnaces. Too little attention has been given to furnace designs which will give efficient, well controlled combustion and easy flow lines, and too little care is taken in the preliminary heating of the new brick work prior to the admission of gas. Even after this stage is passed, brick is rarely given an opportunity to reach its final stable crystalline state, by means of careful and regular temperature increases.

Mr. Hull, in speaking of magnesite brick, states that acceptable brick were produced from domestic magnesite during the war, and that we are no longer dependent upon outside sources for such material. However, even magnesite brick made from the best grade of foreign material are giving the service commensurate with their cost, and that those produced from the domestic product were even less satisfactory. So far as economical operation is involved this country is in no sense more independent of the foreign supply of grain magnesite than prior to the development of domestic deposits of this material. This inferiority may be due to inherent geologic differences in the character of the deposits, or arises from a lack of manufacturing experience. The fact remains, however, that the majority of users emphatically express a desire for a return to the use of Austrian magnesite and brick made from this product.

Chrome Iron Ore Good Refractory

Among other important refractories mention should be made of chrome iron ore, which when containing not less than 43 per cent. of oxide of chromium is one of the most serviceable refactories used in the basic open-hearth. When ground to a reasonable degree of fineness and mixed with water to give the necessary plasticity, the compound is used as a protective coating or covering for gas ports, and port blocks, and plays an important part in the hot repair work in nearly all other parts of the furnace. The high cost is a deterrent to more general use. The development of new sources of supply will assist in reducing the price. Made into brick, the mixture has failed to give satisfactory service.

In spite of a high dissociation point, 2,200 deg. C. carborundum brick have had practically no satisfactory application in the basic open-hearth furnace. Their density, high conductivity and freedom from spalling indicated them as an ideal material for high temperature work. Unfortunately, the oxides of calcium, iron, magnesium and manganese, reduce the 2,200 deg. dissociation temperature to one approximating 1,200 deg. C. and unless thoroly water-cooled to below this temperature the brick fails to give as good results as silica employed in a like manner.

Investigate Oxides

Zirconia and zirkite, both oxides of zircon, and a silicate of the same element, are undergoing extensive investigation in the

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Editor's Note—Discussion of a paper by Robert Kinney entitled "Refractories in a Steel Plant," presented by Walter A. Hull at the American Iron and Steel institute meeting, New York, Nov. 18, 1921. Mr. Kinney is superintendent, open-hearth steel department, South Chicago works, Illinois Steel Co., Chicago.—Reprinted from Iron Trade Review.

hope of developing a superior high temperature refractory. Difficulty has been encountered in making brick from them, and in addition, it has been demonstrated that under the action of fluorine gas they disintegrate badly. Since the basic open-hearth uses for slag fluxing purposes is not far from seven pounds per ton of ingots of calcium fluoride in the form of fluorspar, the fluorine fume from this flux may make the use of this material in the connection mentioned impractical.

In conclusion, it is fitting to express an appreciation of the work that has been and is being carried on by the many investigators in this important field. An evergrowing interest is noticeable and a practical application in the steel industry of the results of research is assured.

ROAD MATERIALS MUST PASS TESTS

Every carload of cement, reinforcing steel, gravel and sand for concrete road pavements or bridge or culvert work used during the 1922 season in Iowa will be subject to rigid inspection. Every carload of brick and tile, of road oil and of bituminous materials of all kinds entering into road work will have to pass the inspection of trained engineers before its use will be permitted.

Testing and inspection work is in charge of the Materials and Test Department of the Iowa state highway commission. Approximately 30 men are engaged in this department. The main laboratory is located at the highway commission office at Ames, Ia., and branch laboratories have been established at Mason City, Davenport and Des Moines.

* * *

Why Importation of Brick Would Not Relieve Shortage in New York

TWICE IN ONE WEEK IT was demonstrated to the representatives of the Lockwood Committee that foreign building brick offered no practical cure for the present famine in building material supply, says the Dow Service daily building report of May 20, 1922.

The public is not only being fed with a false hope, when it lends itself to shape its building construction plans upon such a proposal, but American brick manufacturers, doing business in the biggest building material consuming market in the world, with more capital invested in their industry this year than ever before in recent years, would have their energies chilled at the outset of their endeavors to meet the emergency, did they not know that only as a war time expedient is it either practical or possible to successfully transport common building brick across the Atlantic for building construction purposes.

Brick Imported in 1917

In August-September, 1917, when this country was at war with Germany, J. J. J. brick, manufactured by Jova Brothers, in the Hudson river district, was purchased by the Government for delivery in France at a cost of $80 per thousand, set down upon a French pier. These brick were shipped without regard to the condition they were in at time of delivery in France. They were not encased in casks as many steamship companies require for purposes of easy handling or for stability in time of storm at sea while in transit. They were dropped into the hold of the ships, stacked as best they could be and were hauled out of the vessel on the other side by bucket.

Common Brick Importations Unsuccessful

Since that time common brick has been brought to this country in holds of ships in limited quantities for ballast. Shipping companies have sought to sell it upon its arrival here, but the edges were round, from erosion due to shifting of cargoes during stormy passages at sea, they were of a size larger than American standard size, they were full of bilge water, which would stain white upon the completed wall, if they could have been used at all, and the breakage was so great as to cause the entire quantity to be sold for grinding purposes solely.

Ten million brick, said to be available for shipment to this country would not be sufficient to meet a tenth of the requirements of this market for the next two months. The only place in Europe where that quantity of brick is available at present, is at Danzig, according to available record, and that brick is about the size of our fire brick, 9x4½x2½ inches, whereas the standard size of an American common brick is 2¼x3¾x8 inches. The use of an out size brick in American walls would require the redesigning of thousands of buildings. Three American size brick laid side by side make a 12 inch wall. Three European size brick laid the same way would make a wall 13½ inches thick which would throw out all steel specifications, window, door and vent detail and sills.

Margin of Profit Very Small

The United States Government, during the war, after an investigation into the actual cost of manufacturing common brick on the Hudson river, season 1917, set $11.50 a thousand at the yard. The cost of making this same brick in 1920 was $13.69, plus $3.43 a thousand for transporting to this city by barge, making $17.12 a thousand, and brick actually sold here at wholesale at that time at $18 as quoted on open market on September 18 of that year.

With the turn of trend of building construction from housing, which, financiers believe has been over-done as an investment proposition, commercial building is bringing with it an accentuation of the almost constant climb in building construction costs for the last year. Housing activity created a market for cheaper grades of building materials, which established the market price quotations for that period. Now, however, the demand for materials for use in higher grade fireproof construction is causing a stiffening of prices in general.

Speculative House Builder Leaving Market

It is a fact that certain material manufacturers are less inclined to make forward order commitments. They cannot make sure of coal supplies and they are disposed not to make contracts for delivery beyond their present fuel supply.

The cumulative result of this situation, plus others, is that the real activity of the building construction season of 1922 is to be pushed over into the last half of the year when building material prices will be higher in most lines because no reserve stocks are being piled up while fuel is hard or impossible to obtain. The speculative house builder is no longer the dominant factor in the building market. He has retired in favor of the investor who foresees the demand here for commercial space a year or two hence and who has resources sufficient to permit him to overcome obstacles so as to be ready when the big space renter comes back to New York.

If Normal Production Were Maintained

Clay Plants Could Reduce the Amount of Money Invested —Labor Would Be of a Higher Grade and More Efficient — Ideal Conditions Could More Nearly Be Approached

By W. F. Godejohn

Editor's Note—This article depicts conditions which approach the ideal and which are highly desirable. Altho it is doubtful whether many plants can maintain absolute normal production as set forth here, the article nevertheless contains some ideas which are well worth while and by which the reader can profit.

IT IS GENERALLY CONCEDED that periods of industrial activity are followed by periods of industrial depression, with each period of somewhat the same duration. We do not, of course, go immediately from a period of severe depression to a period of "boom," or vice versa, but the waves gradually rise or fall and the trade cycles are completed. This is true generally and the Brick Industry is no exception. Production increases or decreases from year to year depending upon which side of the circle business is on—if we are on the "prosperous" side, production increases; if we are on the "depression" side, production drops.

If we analyze the production statistics of almost any brick manufacturing plant; or any district; or the industry as a whole: for the past ten or fifteen years and reduce this analysis to graphic form, in all probability we will find "peaks" and "valleys" in much the same manner as those shown by Fig. 1.

Production Varies 50 Per Cent.

If we can conceive of this picture as a fair representation of what takes place in some plants, if not in all, we will note that with a capacity of 17.5 million brick per year, production ranges from 45 to 95 per cent. of this capacity.

When the output of any plant or any industry fluctuates from 45 to 95 per cent. of capacity, that plant or that industry is not operating economically. When the plant or industry is operating at the rate of 95 per cent. of capacity, a working force capable of producing such an output must be maintained. Also sufficient power plant equipment, machines, kilns, and so forth, must be available to produce sufficient power to manufacture, machines to make and kilns in which to burn an output of 95 per cent. of the capacity of the plant or the industry. Overhead Expenses, Supervision, Clerical Help, and so forth, are likewise maintained for the 95 per cent. of capacity output. As long as the output is maintained at 95 per cent. of capacity, economy of operation is perhaps evident.

However, it is when the output of the plant or the industry is reduced to the 45 per cent. of capacity rate of production that many of the serious things happen.

Personnel Changes Frequently

1. By reducing the output by approximately 50 per cent. (from 95 per cent. of capacity to 45 per cent. of capacity), the number of actual producing workmen is also reduced by presumably the same percentage. When this happens, men who have been trained by the individual plant or by the industry, are discharged, and perhaps seek employment in other industries. When plant operations are again resumed on a larger scale, probably labor is scarce and experienced men are not available, so that the plant or industry will again employ men—with no particular training in the kind of work to be done—and spend their time and their money in training them until the next period of depression, when again they will be discharged, with consequent loss to both the individual plant and to the industry, as well as to the workmen themselves.

The workmen, those of whom are desirous of steady employment, would hardly be attracted to the brick industry, since experience has taught them that, generally, brick plants operate spasmodically. Thus the tendency would seem to be that instead of attracting steady, desirable workmen, the industry is doing the reverse.

Intermittent Operation Costly

Thru such methods of operation, both employer and employe sustain losses; the employer thru the efforts and money he spends in training employes, from whom he does not get a full return because of the short duration of employment; and the employe because of loss of wages during the period of depression at which time he is out of employment.

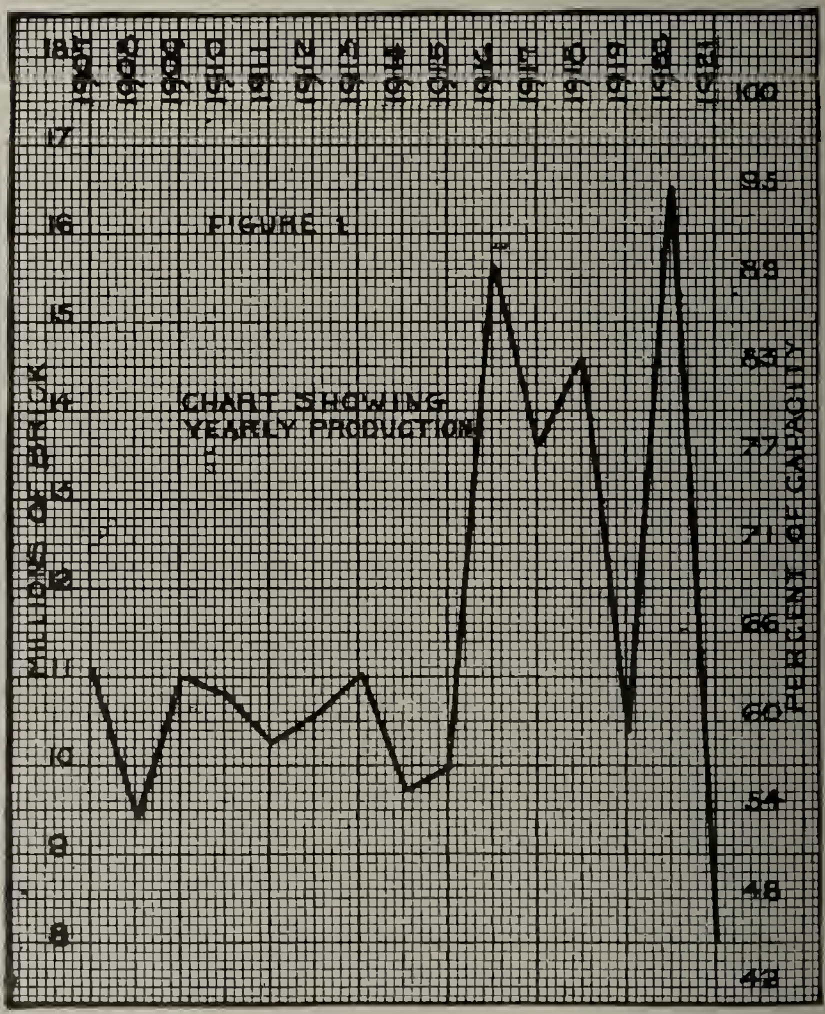


Chart Showing Yearly Production of Plant with 17.5 Million Brick Capacity.

2. While the number of workmen actually producing brick could and probably is reduced in proportion to the drop in out-

put, there are, however, other factors entering into the cost of manufacture that cannot be and are not reduced in proportion to the drop in production. Indirect Labor, Overhead Expenses, Supervision, Depreciation, and so forth, are items that for the most part remain rather constant. Very few men comparatively could be eliminated in the power plant, for instance, by reducing the output. Also the Foremen and Superintendents would, in most cases, remain on the job regardless of whether or not the plant was producing 45 per cent. of capacity or 95 per cent. of capacity. This holds true of Overhead Expenses and Depreciation charges; they do not rise and fall with the rise or fall in actual production.

What Might Be Done

This brings us to a consideration of what might be done to eliminate at least part of this waste. The graph shown in Fig. 1 shows the "peaks" and "valleys," as they appear from year to year. If we could arrange our operating program so as to straighten out these "peaks" and "valleys" and make the line more nearly level, we would have accomplished a great deal.

If we take the same graph as shown in Fig. 1 and add to that a line showing the average yearly production, we will find that this figure approximates 65 per cent. of capacity for the 15-year period. Also if we draw a third line, connecting this point shown at 65 per cent. with the first yearly production figure, we will show the general trend, as shown by Fig. 2.

This trend line indicates the rate of growth and shows for the 15-year period an average yearly growth of about 1 per cent. As stated previously the average yearly production for the past 15 years is approximately 65 per cent. of capacity, or 11.3 million brick, which when increased 1 per cent. to cover the yearly growth, if we can assume the same rate of growth in the future as that shown for the past, amounts to 11.413 million brick per year.

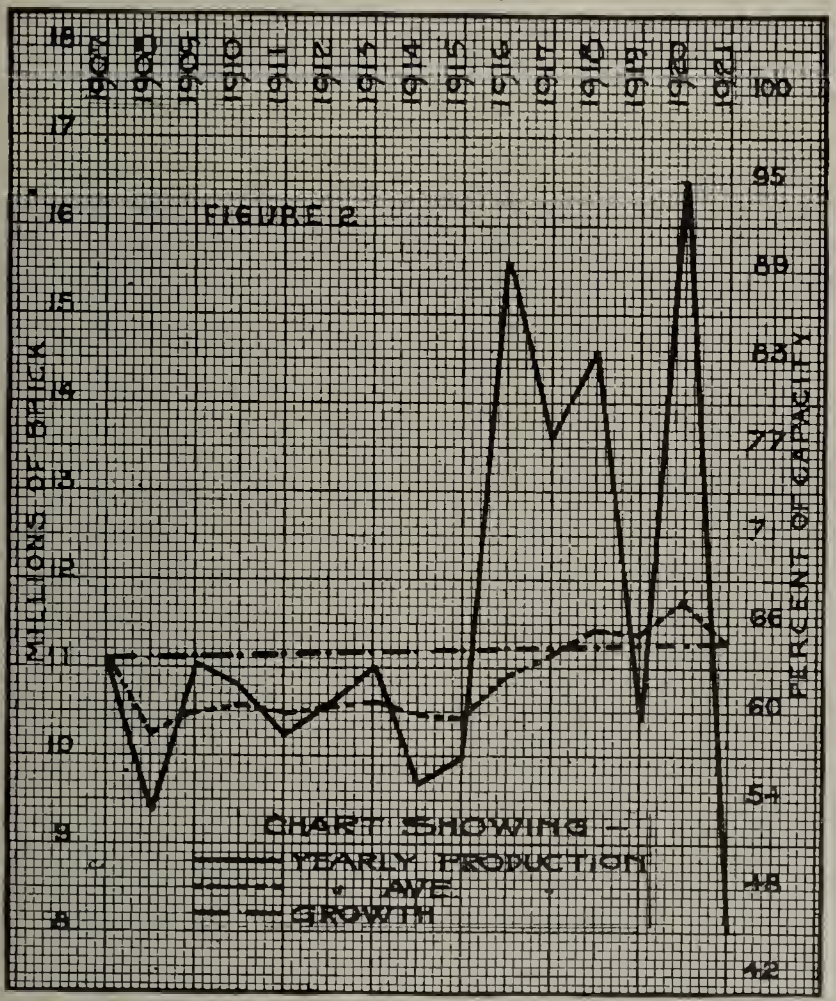


Chart Showing Yearly Production, Yearly Average Production and Growth.

Why Not Maintain Normal Production?

If, as has been shown, this figure represents an average yearly production covering a number of years, why could not this average or normal rate of production be maintained from year to year, and spread out over 300 working days? High and low yearly rates of production could at least be brought closer to the average or normal.

This, of course, would entail a policy of stocking finished products during periods of depression, which would involve tying up considerable capital, upon which interest would accrue, until such time as business began to prosper and the stock was moved. Against this, however, there appear to be numerous advantages in favor of such a plan of operation, that seem to more than offset the amount of money spent in the way of interest. They are as follows:

Steady Work Would Attract Good Labor

1. Employment would be steady, which in itself would make the plant or industry a desirable place to work in for a man seeking continuous employment. It would also reduce labor turnover to a minimum, thereby reducing the amount of money and energy expended in training new employes.

2. By having a steady and regular crew of workmen, the efficiency at which they would operate would be greatly increased. They would become more proficient as time went on and increases in the quality of ware would be evident as well as increases in the quantity produced per workman.

3. Overhead Expenses, such as Supervision, and so forth, would be reduced to a minimum. Instead of building an organization of Superintendents, Foremen, Crew Leaders, and so forth, sufficient in number to capably produce an output of 95 per cent. of capacity, an organization only large enough to produce efficiently 65 per cent. (normal rate) of capacity would be required.

Wage Adjustments Would Be Easier

4. With a steady output, necessitating a steady working force, wage adjustments could be made more easily and more fairly. Workmen would look upon a wage reduction more kindly when they were assured steady work than they could possibly view such a policy under the present operating program, when they work perhaps three or four days per week.

5. The community in which the plant is located would be greatly benefited by the regular and steady industrial activity.

6. Because of the fact that the brick industry, like most other industries, is over capacitated, the amount of capital invested could be greatly reduced under the plan, since the part of the equipment in operation would be operating consistently to capacity, and since that part of the equipment not being operated, could be disposed of or used for other purposes, such as the manufacture of other clay products. Or, if it would not be feasible to manufacture other products, and there was no market for the surplus machinery, and so forth, that portion of the equipment not used at the present time, could be used to replace worn-out equipment and the capacity thereby ultimately reduced to a point where the capacity of the industry (made up of the capacities of the individual plants) would approximate the average yearly sales of brick for the industry as a whole.

Could Reduce Capital Invested

7. By reducing the capacity and, therefore, the amount of capital invested, the earning power of the money invested would be greatly increased because the amount of money earned would be spread over a very much smaller investment.

8. Also by reducing the investment in machines, kilns, and so forth, the amount of money chargeable to Depreciation would be reduced, which would have its good effect upon the profits of the company.

In viewing the question from all angles, it would appear that such a plan of operation—a Normal Rate of Production Plan—would prove to be beneficial to the ownership of any particular plant; the community in which the plant might be located; the brick industry in general and likewise to the workmen, since it would tend to give the workmen steady employment day in and day out, year in and year out, and would make the industry more attractive to that class of labor who seek steady employment.

Fastening Machinery to Concrete

Practices Which Have Been Found Successful in Working with Hard Concrete — Procedure Outlined Step by Step

By Gustav H. Radebaugh

Ass't Manager Shop Laboratories, Dept. of Mechanical Engineering, University of Illinois

CLAY MACHINERY and equipment can be fastened to concrete floors by six different methods. Each of these methods has been successfully used by tradesmen, some being more common than others. The clay plant mechanic can do this type of job to his entire satisfaction without a considerable number of tools.

It is appreciated that when at all possible, it is best to locate all fastenings before the concrete is poured. Considerable time can be spent at a profit in laying out and locating machines and equipment before the floor is laid. This can be done by first deciding on just what equipment is to be placed on the floor and where it is to be located, and by making a floor plan sketch showing in detail just where the equipment is to be placed.

When laying out a new concrete floor on which various pieces of clay machinery are to be located, the location is decided upon and special templetes are made to locate the anchor bolts. The floor is then laid, the bolts being left protruding above the floor at the proper height to receive the machine. Another very effective and economical method of providing means for fastening machines when the floor is laid is to imbed in the green concrete two 2″x4″ at 20″ centers the length of the room. The equipment can then be fastened to short sills which are bolted to the two by fours with lag screws.

Make Templete to Locate Bolts

When laying a new floor, usually provision can be made for fastening machinery, but this is not always possible, as often times the floor is laid in advance of the arrival of the machine, and it is impossible to get the hole center for the clamp bolts. With changes of machinery from one position to another and installation of new equipment on the concrete floor, problems come up as to the one best way to do the job.

In providing means for clamping equipment, a templete as shown in Fig. 1 is made from scrap lumber. The centers of the holes placed in the equipment for fastening to the floor is secured and a layout on the templete is made. These holes are then drilled to receive the anchor bolts. Bolts may be made from short end rods, or, in fact, any old round stock that can be found in the shop scrap box.

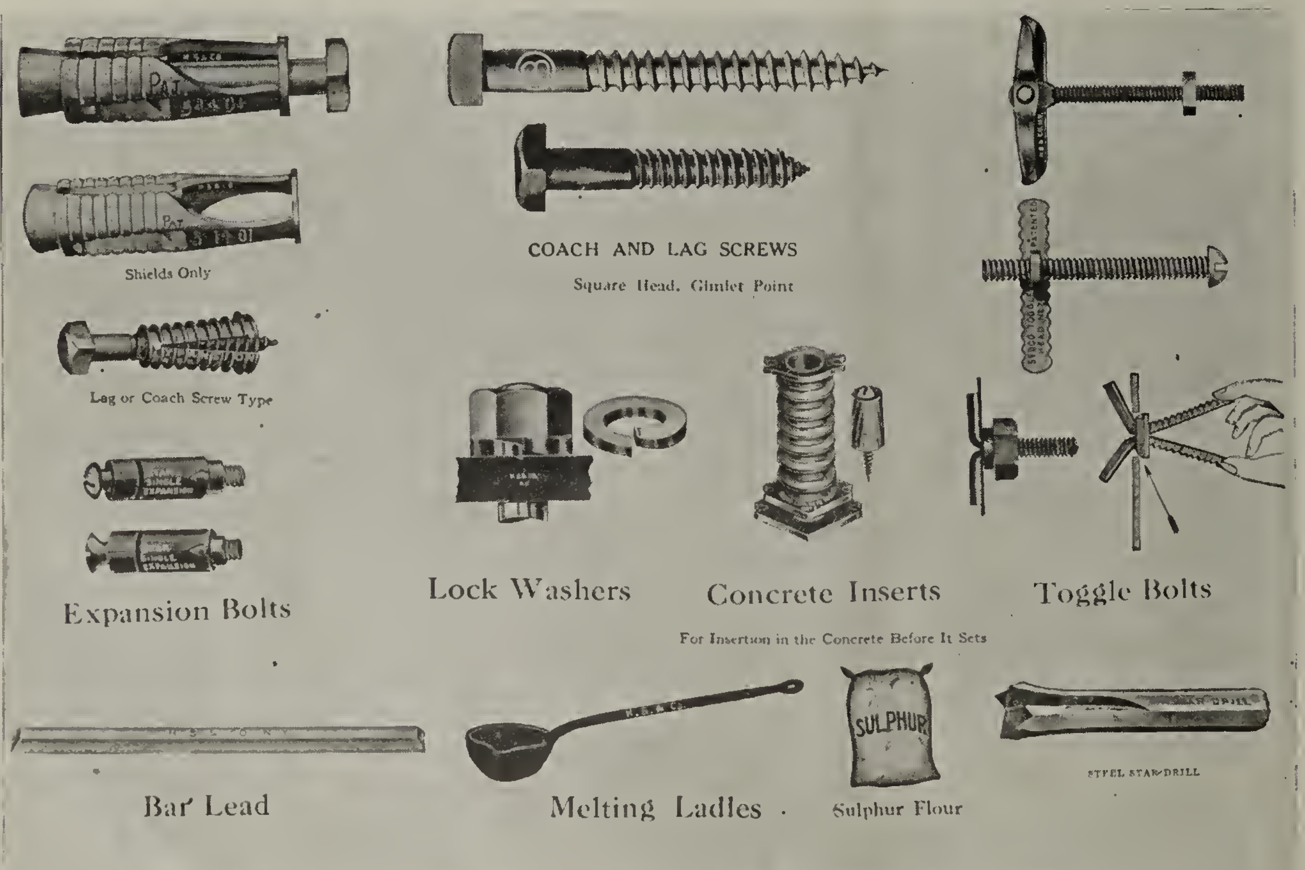
SIZES OF HOLES FOR SINGLE AND DOUBLE SHIELDS FOR EXPANSION BOLTS.

Dia. of Bolts		¼	5/16	⅜	7/16	½	⅝	¾	⅞	1
Length of Shield	(Single)	1	1½	1¾	1¾	1¾	2	3	3¾	3¾
	(Double)	1½	1⅞	2⅜	2½	2⅝	3¼	4	4¾	5
Size of Hole to Receive Shield	(Single)	½	9/16	11/16	13/16	⅞	1	1 3/16	1⅜	1 7/16
	(Double)	1½	9/16	11/16	⅞	⅞	1	1¼	1½	1⅝
Dia. of Star Drill Required	(Single)	½	9/16	11/16	13/16	⅞	1	1 3/16	1⅜	1 7/16
	(Double)	½	9/16	11/16	⅞	⅞	1	1¼	1½	1⅝

It is always a good plan to cut considerable thread, for if the bolt is set high the nut will not shoulder, but will be permitted to tighten down on the machine base. A right angle bend should also be made on the end without the thread. This helps hold the bolt after the concrete is set and eliminates any tendency to loosen when tightening up on the nut. After the floor has been leveled down and the cinders or rock tamped in place, the templete holding the bolts is located, as in Fig. 2. Care should be exercised in seeing that the bolts are set at the proper height. Notice the washers under the nuts to bring the bolts to the height required, gaging the face of the floor to the underneath surface of the templete.

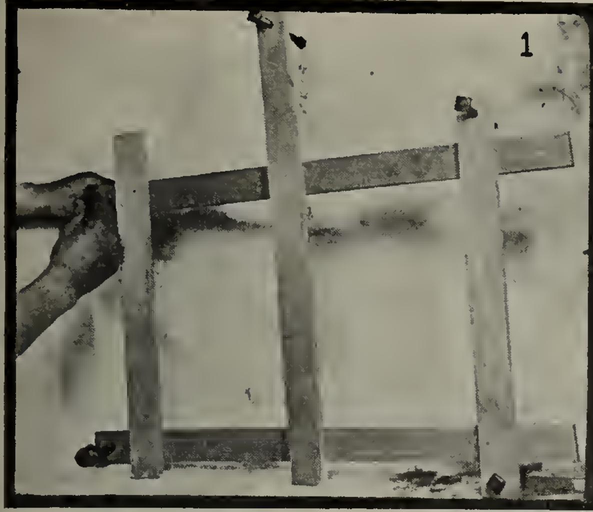
Anchor Bolts Should Not Be Too Large

Anchor bolts should always be considerably smaller than



FASTENINGS USED IN CONCRETE FLOORS, AND TILE WALLS

Plate I.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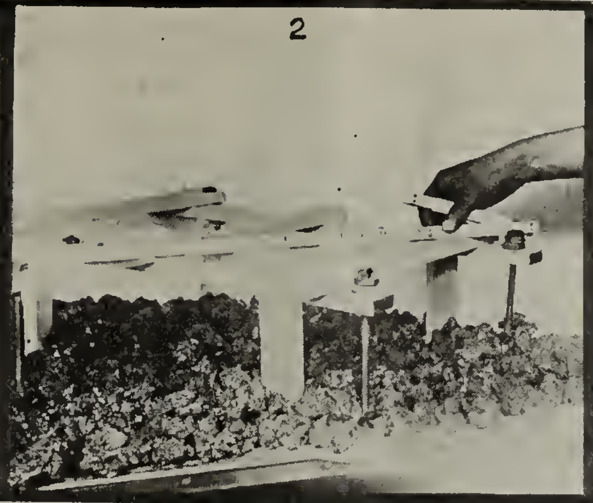
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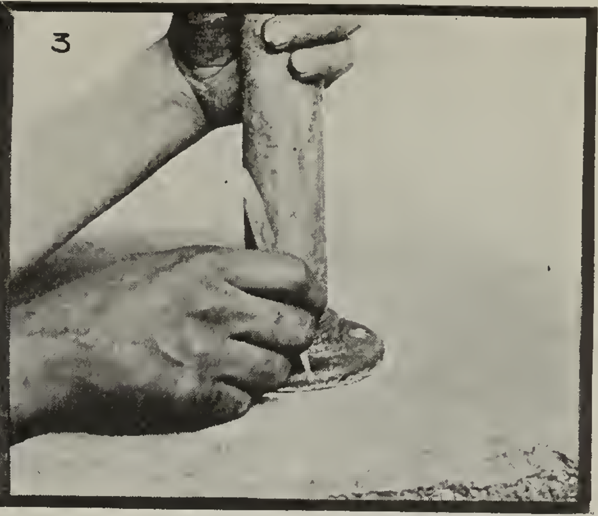
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the hole in the machine, as it is a very trying job to fit a machine to bolts firmly set in concrete that are not properly placed, as well as a little large. To make it possible to bend or adjust the bolts to fit the holes in the machine base, pipe nipples can be placed on each bolt. On a job, as shown in the view just referred to, pipe nipples one inch in diameter and four inches long are used, with the top edge coming flush with the face of the floor against the underside face of the templete. When the concrete is poured around the pipe, it will leave an open space four inches long between the bolt and pipe. This permits bending or springing of the bolt to desired position. This same action can be secured by cutting away the green cement to a depth of one or two inches around the bolts. This can only be done when the machine has a large base covering considerable area.

Installing Equipment

A reference to Plate I will show the several styles of supplies used by tradesmen to make fastenings to concrete or tiling. The expansion bolt and the lag screw are the most common of the supplies, but are not as generally used as they should be to secure the best service. It is a common practice to drill a hole in the concrete floor a little smaller than the lag screw. It is then screwed into position. If the machine has any vibration at all, this scheme will not stand under repeated strain and a loose lag screw will soon follow.

To get the best service from any machine, it should be securely fastened to the floor. It is very hard on a machine to have some of the bolts loosened and others tight. This throws uneven stresses on the machine and is often the reason for overheated bearings and spring shafts. It is a job worth the time to do well.

Fastening to the Wall

In these supplies is shown a toggle bolt in three styles. This bolt is often used when clamping brackets, and so forth, to tile walls. A hole is drilled on one side of the tile, the bolt wing being on a pivot turns parallel with the bolt. It is then placed in the hole and the wing drops to right angles to the bolt; the bracket is put in place and the nut tightened. It is not uncommon to see a hole placed entirely thru the tile wall. The use of the toggle bolt eliminates this very bad practice.

In placing stanchions for ceiling or stair supports or other uses the pipe is fitted with a floor flange, as shown in Fig. 3. With its location established, the center of the holes are marked onto the floor. This can be done with a slate or lead pencil, or end of an old file or scriber. It is always good practice to mark a line around the job, as it acts as a check in relocating. Holes are next drilled in the concrete with the star drill. It is used, as shown in Fig. 4. With light, quick taps of the hammer, constantly turning the drill, a clean round hole is cut into the concrete to the desired depth. A more detailed view of the star or cutting end of this drill can be seen in Plate I.

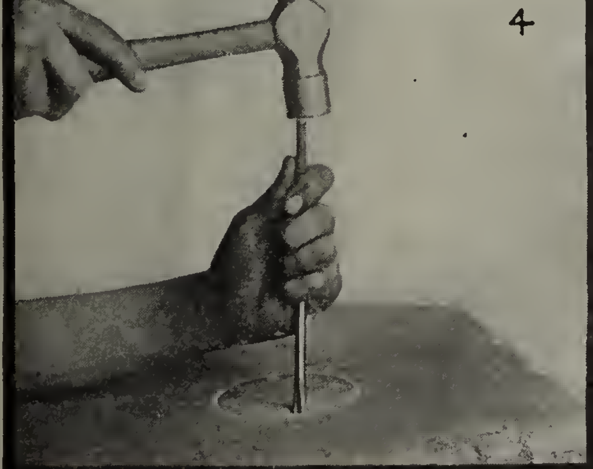
Other Methods of Drilling Concrete

There are several other methods of drilling holes in concrete, which are useful. An ordinary flat cold chisel can be used, but only with extreme care, as there is danger of chipping the concrete in a considerable area around the hole. With the machine shop fitted with a forge, a very useful drill can be made from an old round file, a fish tale cutter being forged on the end. Do not forget to draw the temper from the end which receives the hammer blows.

Another very good scheme is to make up a core drill from a piece of pipe. Pipe of the proper outside diameter is secured and a series of teeth are cut around the periphery on one end; this end is then case carbonized. It is then ready for service. To case harden or carbonize, heat to a bright red, withdraw the drill from the fire, and sprinkle with potassium cyanide inside and out, all around the newly formed teeth. It is again placed in the fire to allow the carbon in the cyanide to soak in. After it heats up again to a bright red, cover the end the the second time with cyanide and plunge in water. The star drill, however, is the best of these tools mentioned, and if much drilling is required it will more than pay to secure one for the job.

Fastening with Wood Plugs

In one method of fastening wood plugs and wood screws are used. A block of wood is driven into the hole cut in the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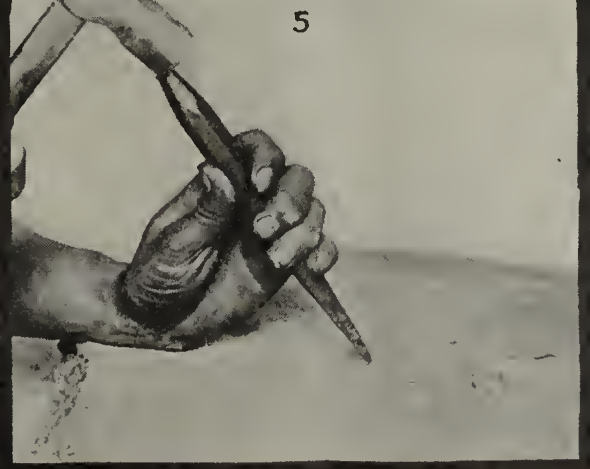
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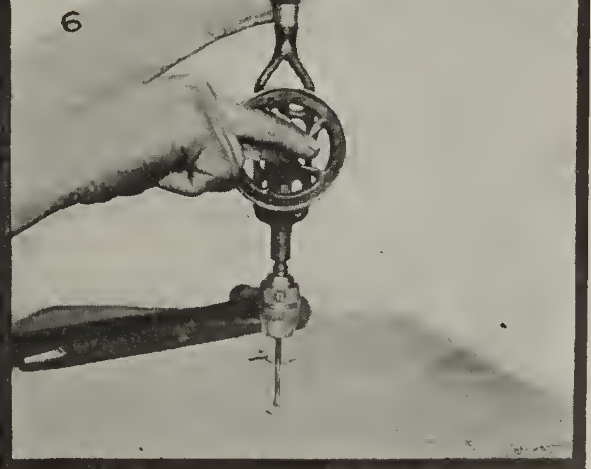
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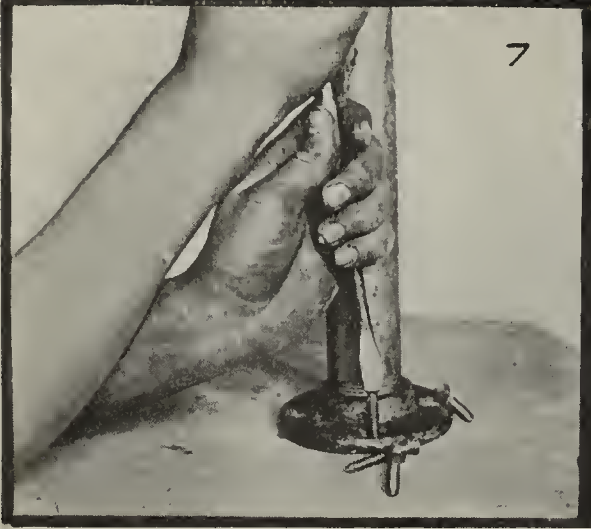
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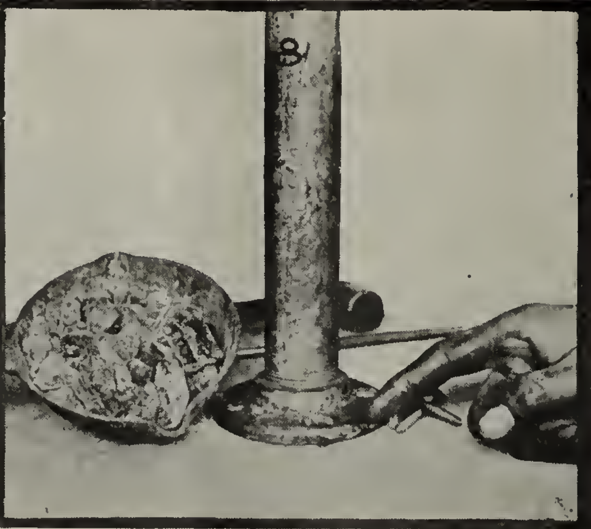
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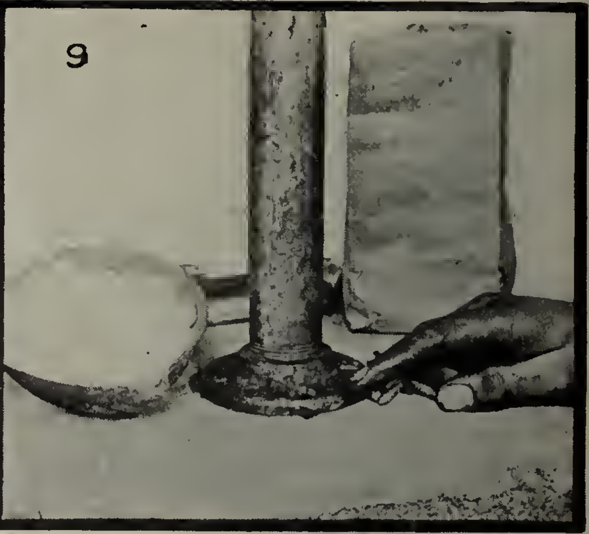
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concrete with the star drill. Straight grain wood is selected and shaped a little larger than the hole. It is then driven securely in place and cut off flush with the floor. The machine or pipe is placed and the wood screw is driven into the block. This is not the best method, however, for machine or rail setting on concrete.

Using lag or wood screws in lead gives a much better job of fastening than the block of wood. In the drilled holes lead is poured. Care must be exercised against dampness, as there is danger of an explosion of the lead in a damp hole. The pouring heat of lead can be gaged by placing a pine stick in the heated lead. If it smokes, the lead is ready to be poured. After the lead is poured and is allowed to set, it can then be hammered or peened to insure its filling of the hole. The metal left above the floor line can be removed by chipping, as in Fig. 5.

Cutting Off Overflow Lead

To do this properly, do not pry the feather edges from the lead slug, but actually cut them off with a chisel. Start the cut in the center and work out. This eliminates danger of breaking sections from the slug, as well as loosening up the lead in the hole. The lead being flush with the floor, the job is now placed in position and the holes are laid out for the second time. To assist in the location of the job the line marked around the floor flange as previously described is used.

The marks showing the location of the holes are centered with a center punch and a pilot hole, drilled as in Fig. 6, to receive the screw. To properly select this drill measure the root diameter of the screw, using a drill a trifle smaller. The hole should be slightly countersunk before placing the screws, as shown in Fig. 7. It will be found that considerable pressure will be required to drive the screw into the lead. A little kerosene in the hole will ease the screw.

Pouring Lead Around the Screws

To simplify the job, it is often the practice, after the holes have been drilled in the concrete, to pour lead around the screws. By doing this the work of laying out the holes for the second time is eliminated, as well as the drilling of the pilot hole in the lead and driving of the screws.

The only objection to this method is the uncertainty of filling the holes, on account of the blowing or sputtering of the lead. A small channel or gateway must be cut from each hole extending "clear" from the flange to receive the molten metal. If the job is a loose one, after the metal is set it may be tightened with the screws.

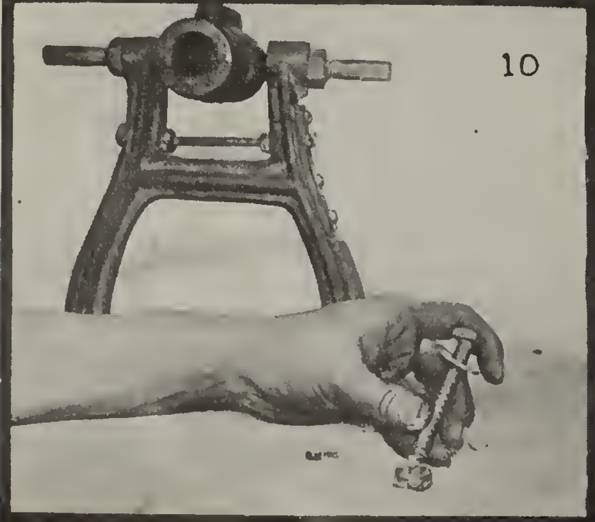
Resin is often used (Fig. 8) instead of the lead in this operation. Commercial resin is heated in a babbitt ladle on the forge fire and poured in the same manner as the lead. The resin should be heated until it runs freely from a rod or coal hook. It fires easily, so care should be exercised when heating it. It is always a good plan to have a small piece of sheet iron a little larger than the ladle held in a pair of forge tongs to place over the ladle in case the resin should fire.

Resin Easily Handled

Resin is considerably cheaper than lead and can be as easily handled. When pouring there is not as much danger from an explosion caused by dampness as when pouring lead.

If difficulties are encountered in holding equipment to an exact position, the one other material to use is sulphur. Sulphur has been used on several jobs that the other methods mentioned would not hold. The flower sulphur is shown in the ladle in Fig. 9 ready to be heated. The sulphur is tested for viscosity by the same methods as the resin. It does not fire as briskly, and the fumes are bothersome. It is best to heat the sulphur out in the open when the fumes are carried away. The sulphur when poured in the hole does not draw away from the walls of the holes, as some of the other materials do. This is one of the reasons why it has such a superior holding quality.

In fastening jobs as just described, any kind of a threaded bolt or screw can be used. The lag and coach screws are used probably more than any of the other styles. On some of the larger jobs machine bolts with nuts are used instead of lag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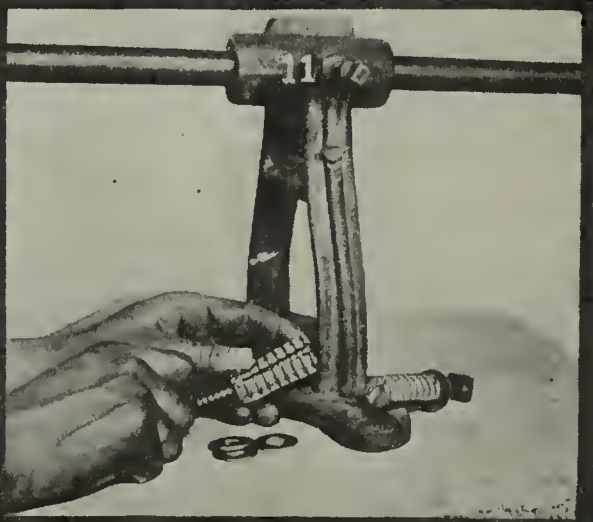
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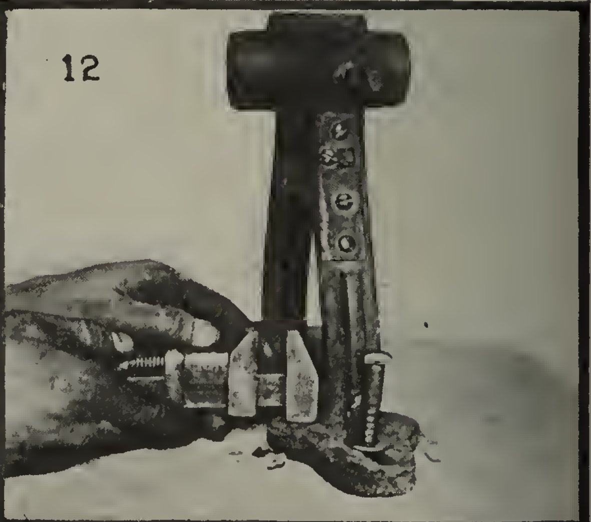
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screws. On all the smaller jobs the ordinary wood screw is used, as shown in the job just described.

Expansion Bolts for Fastenings

One of the best and most convenient methods of fastening equipment to concrete is done with the expansion bolts. These expansion bolts, as a reference to Plate I will show, are made up with malleable iron shields which are designed to receive the machine bolt, lag, or coach screw and the machine screw. The shield expands as the bolt is screwed into it, which causes the shield to tighten in the hole. The farther the bolt is screwed into the shield the more it expands and the tighter it becomes. These shields are made in two styles—one expanding from one end, called single shield, and the other expanding from both ends, called double shields. In Fig. 10 is shown the single shield and lag screws ready to be placed in the floor to hold a shafting hanger.

Measuring Size of Expansion Bolts

Some confusion has always existed as to the proper way to size expansion bolts. The diameter of the expansion bolt is understood to be the size of the bolt itself and not the outside of the expansion part or shield. The length of a bolt required on a job is found by adding the thickness of the piece to be clamped to the floor to the length of the shield. To secure the best service from this type of bolt holes should be drilled in the concrete of the proper size. If the hole is a little larger the gripping power of the expanding shield is greatly reduced. Use a star drill the same size as the diameter of the shield, referring to Table I for proper size. The shield is then inserted in the hole, Fig. II, and, if necessary, driven in position by using a hammer and a block of wood.

It is always best to have the shield just a trifle below the face of the concrete. This will eliminate any possibility of the shield tightening against the job instead of against the walls of the hole. As shown in Fig. 12, the job is ready to be located. When screwing down the lag screw the use of a little oil is advisable. To give a double guarantee that the job will hold and will remain serviceable for considerable time, lead, resin, or sulphur is poured into the hole around the expansion shield.

* * *

BE ON YOUR GUARD AGAINST SWINDLERS

Attention of Brick and Clay Record has been called to the fact that unscrupulous persons are taking advantage of advertisements appearing in the paper to defraud clay products manufacturers. Some time ago the Gas City Brick Co., Ltd., Medicine Hat, Alberta, inserted an advertisement for a superintendent in Brick and Clay Record. This advertisement was answered by a man, who gave as his name and address, E. M. Edgington, Box 25, Villa Route, Charleston, W. Va. He requested of the Gas City Co. that they advance him $200 against his salary to enable him to come to Medicine Hat. This money was forwarded to him and not returned, nor did he put in his appearance at Medicine Hat. This man answered another advertisement thru Brick and Clay Record in the spring of 1921.

It is part of the game of these men to submit beautiful references, written by themselves, which are intended to make the advertiser give them the preference.

Clay products manufacturers are warned to be on their guard against such swindlers, and to take precautionary measures to avoid being defrauded. If any other manufacturer has had a similar experience, Brick and Clay Record would be glad to know of it.

* * *

THE FABLE OF THE FOOLISH FARMER

This cartoon with the story appeared in the Chicago Sunday Tribune of May 14 under the above caption. The story especially contains a lesson which most of us can take to heart. Are you manufacturing clay products as well as you know how?

"Once upon a time there was a Solicitor of a worthy Farm Journal who set forth to obtain subscriptions to his paper. He believed in the great value of the paper. He thought it ought to be in every Farm House, for by reading the paper the Farmer would be enabled to do better farming more economically and would naturally make more money. So he went about among the people, and when he saw one who looked to be a Farmer, he solicited a Subscription, many times successfully, but, alas, sometimes in vain.

"Naw, I Aint Farmin' Now as Good as I Know How."

"One fine day while flivvering along a country road he encountered an old gentleman resting against a tree in front of a farm house. He wore an 1895 hat and his shoulders sagged easily under the weight of his galluses. A scraggle of beard bristled jauntily from his chin, riding up and down as he chewed his tobacco. His Adam's apple ran the scale of his neck, keeping perfect time with the rhythmic rotation of his sub-maxillary.

"'This paper will be of Great Value to you,' said the Solicitor politely. 'By reading it you will be enabled to do better farming more economically and will naturally make more money.'

"The Old Man listened to the story.

"'Naw,' said he, 'it ain't no use for me to read your paper, 'cause I ain't farming now as good as I know how.'

"Reflection—How many people who work could say the same?"

The cartoon and story were by John T. McCutcheon.

* * *

STUDY CHANGES IN "OXIDATION PERIOD"

During the firing of ceramic wares, shortly after the body has been completely dehydrated, what is known as the "oxidation period" begins, during which time many chemical and physical changes take place. Just what these changes are and how best to facilitate the desirable and at the same time retard or eliminate the undesirable is to be the subject of an extended physico-chemical investigation at the ceramic station of the Bureau of Mines at Columbus, Ohio. Chemical analysis and microscopic examination is to play an important part in this work.

Preliminary work is under way upon the disassociation of siderite and pyrite under varying temperatures and pressure conditions. An apparatus is being designed to measure volume and weight changes in one operation. This work is of prime importance, as chemical changes take place during this period which, if not properly understood and controlled, are likely to cause the ruination of the product.

Tragedies in the Brick Industry

Abandoned and Idle Plants Thruout the Country—Many in Excellent Condition—Quality More Important Than Quantity

By E. J. Hutmaker

SOME TIME AGO I saw published in a circular letter sent out by, I think it was the Common Brick Manufacturers Association of Cleveland, the very disturbing news that in 1900 there were 6,500 common brick plants in operation thruout the United States and that in 1920 this number had dwindled away to less than 2,500. It hardly seems possible that such a marked decrease could take place in a business that has grown and stood for thousands of years from the adobe period of the ancients to the present period of the burned brick.

Builders of the early prehistoric times had the same competition in stone, cement and other materials that we encounter in the present age. Everything that entered into the matter of construction was correspondingly dear, besides the burdensome primitive methods of transportation and uncertainties of peace. Yet brick endured and passed on thru the turbulent constructive periods and while some of the important arts were lost and have not yet been recovered, brick passed thru all stages of world christianizing and empire building, has seen governments rise and fall, nations crumble and peoples perish up to the present generation, when we are suddenly confronted with the undeniable facts that the age old industry has lost 50 per cent. in a period of 20 years. What is the reason?

Abandoned Plants Are Numerous

When traveling over the country, you will not have gone far before you run past an abandoned brick plant, maybe the clay ran out, maybe the consumption ran out or maybe the money ran out, but it's abandoned just the same; you take a look over the yard and what you see on the average abandoned brick plant, would hardly be an inducement for anyone with an investing spirit, to take a chance on a profit in the clay business. Now why is this plant abandoned?

Every now and then one sees an almost perfectly equipped plant lying idle; a plant that probably represents an investment of from $50,000 to $150,000 or more, and in some cases has been idle for several years. I recently saw a plant idle for six years and in looking it over I found that less than a hundred dollars and a few days' work would set it going in full operation. The money investment amounted to $90,000, the plant being guarded by a watchman receiving salary during all this time. It is one of the best equipped, and best located plants I ever saw. Yet it was idle for six years and not likely to open soon. This is really a weeping beauty. Hasn't nearly every city of any size, some where in its back yard or down along the railroad or along the water front a weeping beauty, wherein and whereby somebody's hopes were blasted, the heart went cold, or the pocket book went flat?

In Boom Days Everybody Built a Plant

There was a time not so very long ago when the brick business saw its real boom days, when doctors, lawyers, sellers of dress goods, shoemakers and tailors, horse doctors and what not organized a brick company with capitalization far beyond any visionary requirements, engaging indifferent or incompetent management in both manufacture and sales, often choosing one of their own members or several, to lead the operations to a profitable goal and after a period of floundering, invariably landed on the shoals, having reaped just what they sowed, leaving behind a trail of sorrow and a tale of regrets.

Looking at a brick when one sees it in its finished state ready for the mason it appears after all as a most commonplace thing. To follow the story of this most commonplace thing, in its journey from the raw material in the clay bank, to the finished product, embodies a story that the uninitiated fails to discover, therefore in so many cases a brick is a brick and most anybody will assume the privilege of praise or condemnation of a thing of which he carries not the least knowledge.

Brick Is Often Criticized

There is hardly a business of manufacture where the art of criticism is so flagrantly violated as it is in the art of making brick. It is a deplorable truth that in a few cases brick manufacturers lay themselves open to undesirable criticism, but it is also an enjoyable fact that many of our craft are widely known for the superior quality of their wares and their constant watchfulness is all that has kept and ever will keep the burned clay industry in that enviable position in which it has stood and endured since the period of our prehistoric ancestors engaged in the assembling of burned earth and mortar in the Babylonian Temples.

The manufacture of brick is clearly dominated now, as it ever was by the survival of the fittest and no business is more mercilessly governed by this phrase than is the art of making brick, and it is largely due to this inexorable law that we find here and there undertakings in our industry that have paid the penalty of not attaining the ranks of the fittest.

Brick Industry No Worse Than Others

Are there more failures in the brick manufacturing industry than will be found in many other lines of manufacture? I hardly think so. We have shining examples in the automotive undertakings, the steel plants, rubber, agricultural implements, sewing machines, pianos, farm tractors, and a number of kindred lines which all have suffered thru inevitable changes and house cleaning; and when it comes to railroads—if business and manufacture would be run on the railroad plan, there simply would be no business. The brick manufacturing industry has suffered much in the past decade but not nearly as much as some other lines and surely not to such a point that it is not susceptible of easy revival.

Our different associations have done much for our industry and they are ever on the job with helpful hints and advice. Our clay journals are an indispensable factor and when one finds a brick manufacturer who neglects their reading you can rest assured he is not progressive, to say the least, and it is a feeling of sorrow that overcomes one when an issue or issues are found with their wrappers unbroken, and when one goes out thru such a plant it is invariably on a par with the unbroken wrapper. Is it possible they cannot read?

Sacrifice Quantity to Quality

Quality has in many instances given way or rather been sacrificed to quantity, not how good but how many is the slogan at many plants.

Quantity always carries down the product with a corresponding reduction in price; is it not better to stick to quality, make 'em good and you'll have no grief, and right now when the cement fellow is such formidable competition, this is more necessary than ever.

Make 'em good and you'll sleep easy, make 'em good, your ledger will show better, your stockholders will like you more and instead of still dead plants the kiln fires will be crackling all over our country.

A few years ago I visited the city of Pola, on the Adriatic Sea, which at that time was a province of Austria Hungary. Pola was the playground of the rich Venetians and the aristocratic Romans during the time of Nero and after. Here I found the ruins of a great amphitheatre, capable of seating thousands of spectators, with seats of cement built in tiers and circles from the ground up to a lofty height for the convenience of those, who for the greed of pleasure, witnessed the devouring of Christians by starved and furious lions and even here, with the abundant use of cement, I found the triumphal entrance arch laid up with burned clay brick but covered over with a plaster of cement. This showed conclusively that cement and brick even at that time went hand in hand, forming a bond of relationship then as now, which was recognized by the master builders of that period as well as it must be considered now many generations after.

Cement Has Cut Into Brick Business

While we cannot but admit that cement has made great inroads upon the production of burned clay, there is no cause for serious alarm if every participant in the burned clay industry will show that spirit of cooperation which is so vitally necessary, not alone for the money remuneration but also for the sake of an art that has been handed down to us from the sleeping past, to the awakened present.

Competition is the life of trade, without it the world would lie dormant; it is the virus that stimulates and encourages man to greater things and if the same energy is used in the burned clay industry as has been applied to cement propaganda, the results will be as amazing in the former as they have been satisfactory in the latter.

* * *

C. B. M. A. NOW HAS FIELD SECRETARY

The Common Brick Manufacturers' Association of America has now made the necessary arrangements to render one more service to its members.

Harry W. Conway, formerly connected with the Cleveland Builders Supply & Brick Co., the Barkwill-Farr Co., and the Farr Brick Co., of Cleveland, Ohio, in the capacity of auditor, will devote his entire time to the work of the association in the capacity of field secretary.

In this capacity Mr. Conway will visit the plants of the members, assisting them to get a system of accounting started, and give counsel, advice and suggestions.

Should any member feel the need of special or extra assistance along this line, Mr. Conway, while in the vicinity, will remain with him a reasonable time at the rate of $20 per day; this rate will not cover the expense, but Mr. Stoddard says he wants the members to feel that this is just one more of the many benefits they are receiving.

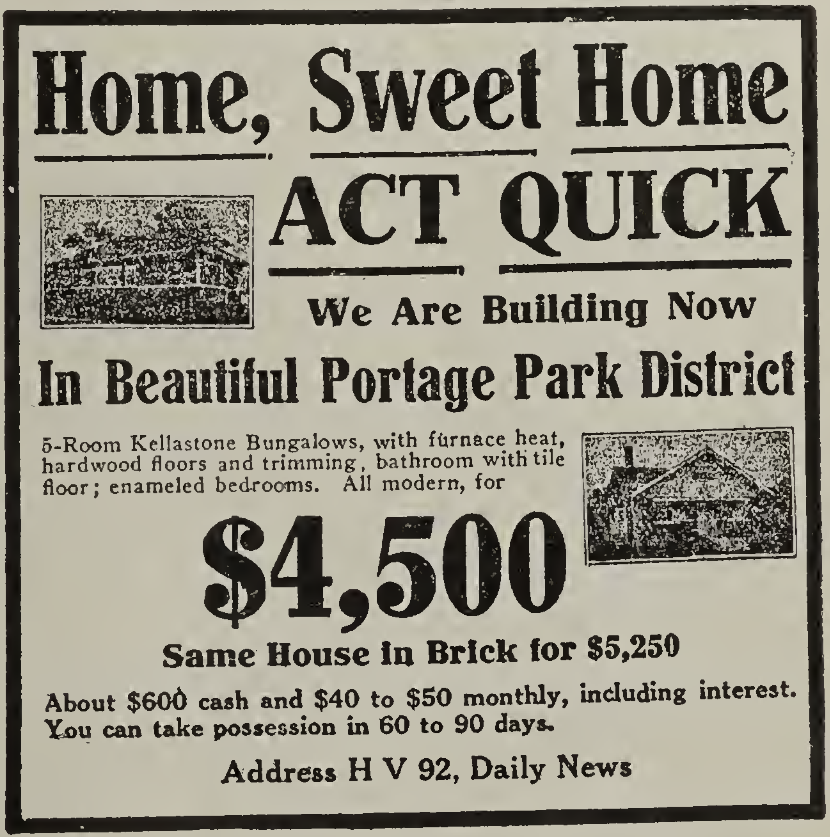
Mr. Conway will supervise the association's "Cost Service Department," so that members who care to correspond with the department regarding any question on accounting may address their communications to the office of the association, 2121 Discount Bldg., Cleveland, Ohio, care Cost Service Department, and their letters will receive the personal attention of Mr. Conway.

* * *

UNMISTAKABLE SIGNS OF INCREASING BRICK POPULARITY

The accompanying cut of an advertisement which recently appeared in the daily papers of Chicago is of more than passing interest. You will note that the builder quotes a price for a stucco house. He features a price of $4,500. He then quotes a price of $750 extra for the same house in brick. This increase is practically 18 per cent. over stucco.

Plans for a six-room house were in March this year submitted to five contractors in Chicago, who bid on various types of construction, including frame, stucco, veneer, face brick on tile and solid brick construction. The bids on solid brick construction averaged less than eight per cent. over the stucco.



Home, Sweet Home

ACT QUICK

We Are Building Now

In Beautiful Portage Park District

5-Room Kellastone Bungalows, with furnace heat, hardwood floors and trimming, bathroom with tile floor; enameled bedrooms. All modern, for

$4,500

Same House in Brick for $5,250

About $600 cash and $40 to $50 monthly, including interest. You can take possession in 60 to 90 days.

Address H V 92, Daily News

From an Unrecognized Position Brick Has Now Found Its Way Into the Advertisements of the Speculative Home Builder.

Apparently the builders in the above advertisement find brick houses in so much greater demand that besides quoting the price on the brick house in the advertisement, they add considerably more to the real difference in construction cost because of the fact that the brick house is more readily salable and will stand the price.

This item could be used by brick manufacturers to show to their contractor friends the advisability of brick or tile construction because of the greater profit in them, besides the many other natural advantages of permanent construction.

* * *

WASHBURN ELECTED CHEMISTRY CHAIRMAN

E. W. Washburn, professor of ceramic chemistry and head of the department of ceramic engineering, University of Illinois, Urbana, Ill., has been elected chairman of the Division of Chemistry and Chemical Technology of the National Research Council. Professor Washburn will serve in this capacity during the 1922 and 1923 term.

C. B. M. A. DIRECTORS MEET

Optimistic reports from all parts of the Michigan territory as to marked and permanent revival of the demand for brick was voiced at the annual meeting of the executive committee of the Common Brick Manufacturers' Association of America held in Detroit, May 17.

Charles H. Bryan, of the Mercier-Bryan-Larkins Brick Co., president of the association, presided and acted as host to the visiting brick men.

General tone of all in attendance was favorable to improved conditions in the brick industry thruout the country. Place of holding the 1922 convention was under discussion, the cities considered being Detroit, Chicago, Cleveland and Los Angeles.

* * *

CONNECTICUT MANUFACTURERS TO ADVERTISE

C. W. King, secretary of the Connecticut Brick Manufacturers' Association of Hartford, Conn., reports much increase in business this year over previous years. The association has placed a publicity campaign in charge of Mr. King to secure larger use of brick in building construction. The use of the Ideal wall construction is being advocated. According to Mr. King, the price of brick at present is as low as it will be during the next year. Orders for brick have practically cleaned up the stocks on hand and the manufacturers are reporting orders in hand which will keep the brick plants in operation during the coming season.

* * *

TO DISCUSS FIRE BRICK TESTS

Among other interesting papers which will be presented at the coming convention of the American Foundrymen's Association is one by H. G. Schurecht, of the Ceramic Experiment Station, United States Bureau of Mines at Columbus, Ohio. Its title is "Behavior of Fire Brick in Malleable Iron Furnace Bungs" and covers a series of tests made in a 40-ton malleable iron furnace operated by the Ohio Malleable Iron Co. at Columbus. The meeting will be held in Rochester, N. Y., during the week of June 5.

* * *

New Booklet Shows Homes Built from C. B. M. A. Plans

AN EXTENSIVE SUPPLEMENT to the book "Brick for the Average Man's Home," issued by the Common Brick Manufacturers Association of America, has just been issued and embodies several features which, according to architect William Carver, make for the added utility of the publication, and increase its worth to brick interests.

The new supplement is beautifully illustrated with actual photographs of houses built from plans furnished by the association. The reason for this, says Mr. Carver, lies in the fact that investigation has proved that the average person is far more interested in photographic representations because they impart the touch of realism.

The houses described have all been approved by competent architects and stand as models for their particular types. Included in the supplement are twenty-one homes, eighteen of which are new and have not been illustrated before. Full working plans are available to the membership of the organization.

"The scope of this service cannot be over estimated," says Mr. Carver. "The advances in the trend toward brick construction is contingent upon efforts such as this. Lumber organizations have long utilized similar methods with telling results, and the inclination toward brick must be furthered by the ability of manufacturers to put forth comprehensive efforts in showing prospective buyers actual results of brick construction.

"The availability of the plans is only made possible thru the Association as the preparation of each separate design would cost individual dealers hundreds of dollars. Under the circumstances dealers and manufacturers can offer the most in practical aid.

"The homes illustrated in the latest supplement are not mere fanciful ideas. They are homes that have been built and have the stamp of approval from the architects. A home builder would be compelled to spend a large sum if he were to engage the services of the architects who designed the various dwellings illustrated. If brick interests are able to reduce this vital item to a negligible amount, certainly the result may be counted upon to react favorably."

The physical appearance of the supplement is in keeping with similar endeavors of the association, which means that it ranks with the most artistic and effective publications of its type.

Two of the Houses Illustrated in the Splendid New Supplement to "Brick, How to Build and Estimate."

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

ENGLISH OUT FOR WORLD BUSINESS

EXPERIENCES of the past year have taught the English pottery folks that to make a low class of goods and cater exclusively to the local markets in inviting disaster. The best they can do is work their factories half-time, and the lower the scale of quality the worse the business. In the cheap grades of pottery the Germans can compete with confidence and success. Hence the tendency on the part of the pottery firms here to improve the standard of their goods and reach out abroad for their markets. For they now realize that the foreign market, while it demands high-class ware, provides the money to pay for it. Export houses in the Longton china trade report that activity is satisfactorily maintained. The manufacturers have met the retailers and have discussed exhaustively the matter of prices. The retailers are not satisfied that, under present conditions, no further reduction to that made last December is now practicable. In view of the fact that some factories still are running at a loss the possibility of reducing prices is considered hopeless. Even where factories are working full time it is thought only a very slight decrease would be politic.

America Good Customer

The latest available pottery figures show that the bulk of export goods from the English pottery fields were composed of general earthenware, jet and Rockingham, these shipments totaling £1,600,000 for the month. The United States took nearly a fourth of this total and remains the best foreign market for the pottery firms of England. In March this year the total exports of pottery ware was £2,635,000 in value, an increase over recent years.

With the gradual revival in the pottery industry in England now becoming more marked each week the potters are casting about for new methods of stimulating demand and creating new fancies in Hanley goods—particularly table and toilet ware. To this end it is not surprising that reversion to some of the old hand work processes (which can be adapted without greatly increasing production costs) is being made by some of the high class houses. "Throwing on the wheel," for instance, is once again becoming a popular method of fabricating a pot. The shapes evolved by the hand thrower are so superior in form and so refined in line as to justify the extra cost involved by the employment of skilled craftsmen, the manufacturers say.

Revert to "Thrown Work"

In the English pottery industry "thrown work" has long been associated with beautiful vases and decorative pieces and the fact that this ancient process is now being very successfully revived in modern plants and carried out in such lines as tea cups and toilet ewers is not without significance. In such lines as toilet goods the "wreath" of the clay formed by the thrower's fingers is left to show 'thru the glaze in the sense that it is a sort of guarantee of handwork.

The demand for these clay lines is surprising and is leading to a revival of another old process, namely that of "slip." In other words, liquid clay applied decoratively, and in a color materially different from that used in the body of the ware. It really is a ceramic process of applying clay on clay and some beautiful results are being obtained. This process was in vogue in the 17th century when Thomas Toft put out his now famous slipware. The Toft dishes were fabricated at that time at a cost of 50 cents or so. Today they are reckoned in the antique class and change hands at around $5,000 apiece. Altho the modern revival in this slipware is limited as yet, there are signs of it becoming very popular again.

New Toilet Ware Designs

Many new designs in toilet ware are now on the market. A feature of these 1922 models is the richness of coloring and the boldness of the fabrication. In dinner, tea, dessert and fancy wares a development of craft processes is noticeable. Hand-painted motifs generally done on the glaze are coming in again. But the new work is distinguished from the old by its broadness and freedom. There is none of the cramped convention of neatness and order that was done to death in the old style hand-painted work.

Generally speaking the pottery houses of England are out for world business. They realize that that is where the markets and the money lie. There are still a few firms there who have not yet lost a single day's work and this can be traced solely to the fact that they always have placed quality before everything else and have always reached out for the foreign markets. The wares of these firms are always technically above reproach and are welcomed in the world-wide markets. Apropos of these markets the pottery exporters here admit that the American pottery manufacturers are becoming keener competitors of the British houses, but they say they do not fear American competition, especially in high-quality decorative stuff, for which there is a big demand in America. As regards the local markets in England the demand is such that firms occupying themselves solely with it would be able to work only three days out of the week. This is one reason why the old-established firms with reputations for high-class goods to maintain are paying more attention to the "overseas" markets than to the markets at home. For the potters are human and they are out for money.

⁂

MALAYA'S NEW POTTERY INDUSTRY

Because it represents an entirely new industry to Malaya, the formal opening of the pottery works at Gopeng was made the occasion of somewhat elaborate ceremonies, says the May 8 issue of Commerce Reports. The plant, which is situated about 16 miles from Ipoh, is equipped to handle all the processes from refining the crude clay to the decoration of the completed piece.

Casting and jollying are the processes used, permitting a comparatively large output with labor that is not yet thoroly trained. Teapots, jugs, ewers, and basins are already being turned out, notwithstanding a few weeks ago the Malay girls employed in the casting room had never seen a pottery. As the available labor becomes more skilled, the production of porcelain ware in bulk is contemplated.

All the materials required for pottery making are found within three miles of the works. Besides supplying its own clay requirements, the company ships china clay to cotton mills in Bombay and paper mills in Calcutta. The barrels for packing the product, it may be mentioned, are made at the works.

The establishment of this new industry in Malaya has aroused widespread interest.

⁂

BRITISH MAY OPEN OWN SELLING AGENCY

It seems that certain eastern importing houses which have for years been making foreign-made dinnerware a sole distributing feature are very much interested in obtaining distribution of American-made ware. As early as last January it was intimated that importers would sooner or later enter the domestic field, for the reason that certain English earthenware manufacturers proposed to establish their own selling agencies in the United States. and sell their export production direct to the trade.

That something is happening in this direction is indicated by the following advertisement which appeared recently:

"China importer of highest standing and A-1 financial responsibility, with well established trade thruout the United States and Canada, with extensive show rooms in best location in New York City and a large staff of experienced salesmen, is in a position to add kindred domestic lines suitable for sale to china and glass retail department stores. Only offers for complete representation in United States and Canada from first class manufacturers with highest references will be considered and must come to hand not later than June 1."

In fact it was intimated in the trade that certain English pottery manufacturers proposed establishing their own sales offices in the United States. In other words, these manufacturers proposed to do business with American dinnerware buyers on the same basis as do the American manufacturers. Home office sales forces would be maintained. Whether or not the manufacturers proposed to carry stocks in this country or not has not been divulged, but, if only sample rooms are maintained, overhead expense is reduced and the foreign manufacturers would then be in a position to offer their merchandise to the American trade at a list something under that now maintained by direct importing houses.

Import jobbers have long been opposed to a high tariff and American valuation on dinnerware, and have so indicated their displeasure of the plan. Therefore, the English pottery manufacturers may be anticipating the future by opening their own selling agencies in the United States.

⁂

INVESTIGATES FELDSPAR MINES

R. B. Ladoo, mineral technologist of the Bureau of Mines, has spent some weeks visiting feldspar mines and quarries in the Western states. Mr. Ladoo has been gathering data intended to make available to all producers information as to improved methods of quarrying and preparing feldspar for market, with special regard to economy of production and elimination of waste.

⁂

RUSKIN POTTERY

Ruskin pottery is named after the great writer and artist and is one of the best products of modern pottery craft. Its aims are a sound body combined with delicate workmanship, beauty of form, a rich and tender coloring and a glaze which makes the ware as delightful to handle as to see. The shapes are all made at the potter's wheel. Textures and patterns suggestive of the rich hues seen in rock pools at low tide are the chief decorations used, since it was seeing these pools which gave the Ruskin potters their inspiration.

⁂

COMPARISON OF PRICES HERE AND ABROAD

The following is part of the data compiled by the Valuation Investigation Division of the U. S. Customs for use by the Senate Finance Committee in forming its tariff bill. Prices were taken on August 1, 1921.

Description of Article	Country	Foreign Value in U. S. Currency	Amount of Duty at Present Rates	Overhead and Profit on Landed Cost*	Selling Price of Foreign Article in U. S.	Selling Price of Domestic Article
Earthenware, pl'n white, doz.	Holland	$.719	$.252	$.467	$1.60	$1.71
Earthenware, pl'n white, doz.	Germany	.478	.167	.475	1.30	1.61
100 piece dinner sets, vitrified china, decorated, gold edge	France	21.74	9.74	33.24	66.42	43.10
100 piece dinner sets, vitrified china, decorated, gold edge	Germany	25.12	13.81	13.10	54.55	40.13
100 piece dinner sets, vitrified china, decorated, gold edge	Japan	15.07	8.29	22.13	50.40	40.13
Bisque dolls, doz.	Germany	.81	.27	1.79	3.00	7.20

*Including duties, but not freight and insurance.

⁂

ILLINOIS PLANT MAKES FINE POTTERY

Pottery that is attracting the attention of lovers of fine pottery and dealers is being made at Morton, ten miles from Peoria, Ill., by Matthew Rapp. The ware fashioned in this little town has heretofore been made in the East, but Illinois has never produced such merchandise until the Morton plant began operations. The coloring is the secret of the charm of this product, each color being burned in separately, and all done by hand. Mr. Rapp began the manufacture of the new line with novelties in the form of small animals. These proved such a success that he began to make vases and jars, and once this Cliftwood ware was discovered by the dealers, the demand has greatly exceeded the supply.

⁂

POTTERY PLANT ENLARGED

The San Pablo (Cal.) pottery plant is adding two new kilns and is removing the clay bins of the Barret Avenue plant, in Richmond, to San Pablo. The space now occupied by the clay bins at Barret Avenue will be remodeled, and used in the manufacture of specials. About 20 additional potters will be put to work. The management promises one of the most up-to-date plants in the country.

⁂

SALESMEN ARE AFTER BUSINESS

Many East Liverpool, Ohio, pottery salesmen are now on the road. James C. Deens, representing the D. E. McNicol Pottery Co., is traveling the western territory, while Fred Kline with the Knowles, Taylor & Knowles Co. line is in the south. Joseph C. Davis, also with this company, is calling upon the trade in the east as is W. C. Browne, with the Potters Co-Operative Co. Zed T. Smith, with the McNicol Co., is working thru the New York state and Pennsylvania territory.

⁂

W. S. GEORGE BACK FROM EUROPE

William S. George, president of the W. S. George Pottery Co., with headquarters in East Palestine, Ohio, and controlling plants at Kittanning and Cannonsburg, Pa., has returned from a three months' trip thru Europe, and now plans to spend a season at Asheville, N. C. Returning home on the boat, he contracted pneumonia, and spent several weeks in a hotel in New York under the care of a physician before he was able to return to East Palestine. Last year Mr. George made a study of business conditions in Alaska.

* * *

FORM MANTEL AND TILE COMPANY

Notice has been published of an application for a charter by Leonard A. Fuchs, John Keretes and Holland F. Flanaven for a corporation to be called the West End Mantel & Tile Co. The object of the new corporation is the buying, selling and dealing generally in mantels, tile and clay products.

* * *

DALLAS POTTERY BUILDS NEW PLANT

The Dallas (Tex.) Pottery Co. has completed building a plant for the manufacture of a varied line of stone and artware from colored fire clays.

* * *

REPORTS ENAMEL BRICK BUSINESS GOOD

Reports from the Tiffany Enameled Brick Co., of Momence, Ill., state that business at present is good. This company has recently installed several improvements, among which are a pyrometer system, waste heat dryer ducts, and a time keeping and production control system.

* * *

WILL DISSOLVE PARTNERSHIP

Petition for a dissolution of partnership has been filed by Charles Fossa Lozo, one of the partners of the Guarantee Tile & Terrazzo Co. of Chattanooga, Tenn. O. Olando is the other member of the company.

* * *

LENOX TO ERECT NEW BUILDING

Lenox, Inc., Trenton, N. J., manufacturer of fine chinaware, has filed plans for the erection of a new building at its plant on Mead street, to cost about $6,000.

* * *

ORGANIZE $300,000 CHINA COMPANY

Organization of a $300,000 company and plans for a plant for the manufacture of chinaware were announced in Uhrichsville, Ohio.

The plant is to be located on a farm near the city of Newport. 50 business men are behind the project. Clay will be obtained on the Morrison farm, where it has been shipped for many months to nearby pottery centers.

* * *

FIRE DESTROYS ILLINOIS CHINA PLANT

According to a press dispatch, fire totally destroyed the Illinois China Co. plant at Lincoln, Ill. This plant was valued at $285,000, and the loss to the stockholders will be approximately $235,000, as the plant was insured for only $50,000.

* * *

FORM POTTERY IN CINCINNATI

The Cin-Nor Pottery Co. of Cincinnati, with capital of $35,000, has been organized, a report states. William J. Mahoney and Anna Mahoney are the principals.

* * *

PLAN NEW POTTERY IN KENTUCKY

A pottery plant is to be constructed in Lexington, Ky., this summer to manufacture the product of pottery lands at Bybeetown, Madison County, ten miles east of Richmond, it was announced recently by Lexington capitalists. Kentucky blue ware is to be manufactured. It now has a scattered sale in all parts of the country.

* * *

ADD POTTERY TO TRENTON FAMILY

Among New Jersey charters granted during April was one to the Acme Pottery Works, Inc., of Trenton, dealers in pottery, and capitalized at $100,000. Noah W. Boch, Rahway, N. J., Anna H. Kennedy and Mae K. Hoffman, Morris Heights, Pa., head the organization.

* * *

PLANS PRODUCTION OF FELDSPAR

The Basin Quarries, Inc., Portland, Me., recently organized, is planning for the operation of extensive feldspar properties at Phippsburg, for the production of material for pottery manufacture and other service. The company has a tract totaling about 100 acres, and will install a large plant. Joseph F. Perry is president.

* * *

WILL BUILD GLOST KILN

The Owen China Co., of Minerva, Ohio, which is under the management of Charles W. Foreman, plans the erection of an additional glost kiln. This is expected to be erected within the next two months. This company is now making a special effort in the production of high grade border patterns on dinnerware for the department store trade.

* * *

POTTERS GET BACK INTO HARNESS

Frank A. Sebring, head of the Sebring (Ohio) Pottery Co., who has been spending the winter in Florida has returned to his desk. Charles A. Sebring, his son, has been in active charge of the plants of this concern.

George C. Thompson, president of the Thompson Pottery Co., has returned to the plant at East Liverpool, Ohio, following a three months' stay at Mt. Dora, Fla., as has been his custom for some years.

* * *

E. J. TOUHILL PASSES AWAY

Edward J. Touhill, for several years manager of the sales department of the Colonial Co., East Liverpool, Ohio, died May 7 at Cleveland. The body was taken to St. Catherine, Canada, for interment.

After leaving the Colonial, Mr. Touhill went with the Tritt China Co., at Niles, Ohio, now the Crescent China Co., and after spending several years there as sales manager went with the Kinney & Levan Co. china importers, of Cleveland, Ohio, with which concern he was identified at the time of his death.

* * *

CEYLON IMPORTATIONS BREAK RECORDS

Ceylon imported 554,196 rupees worth of chinaware in 1921, the record value of the past four years. In 1920 these imports aggregated 534,285 rupees (rupee=$0.3244 at par); in 1919, 228,453 rupees; in 1918, 245,324 rupees.

* * *

TERRA COTTA SOCIETY MOVES

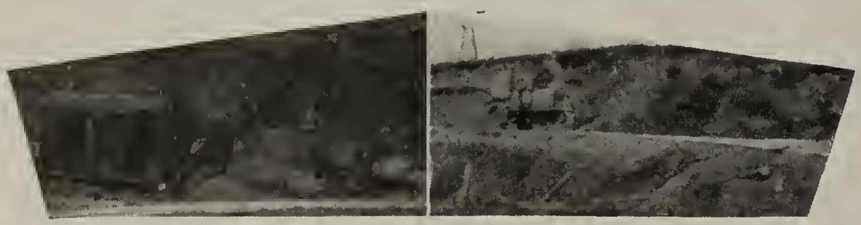
Removal of the offices of the National Terra Cotta Society to the Berkely Building, 19 West 44th Street, New York City, has been announced. Communications should be addressed to the company in its new location.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

BUILDS WOOD ROADWAY CHEAPLY

In the April 18 issue of Brick and Clay Record the wood runway, built by the Risclay Brick Co. to facilitate hauling of clay from pit to machine, was described. Since the publishing of that article accurate and complete cost information regarding this runway has been received. The runway was built in sections nine feet long and five feet wide. 2 in. by 6 in. dressed planks were used and nailed together with four cross ties in such a manner as to permit every other piece to project one foot, so that the sections would fit together. 1,000 board feet per 100 feet were used in the roadway, which was approximately 1,600 feet long.



Two Views of Risclay Brick Co.'s Wood Roadway.

Cost of lumber (Market)	$40.00 per M. f. b. m.
Cost of lumber (Actual)	27.00 per M. f. b. m.
Cost to lay 100 feet	2.857
Cost of lumber per 100 feet	44.00
Total cost of roadway per 100 feet	$46.857

The illustrations show how convenient the runway makes loading of the Clark tructractor and easy running over what would otherwise be a very bad dirt road.

* * *

STANDARD PIPES AS COLUMNS OR STRUTS

Standard pipes often come in handy for use as columns or struts or for use as "push members" in transmitting forces. This is because a pipe is strong both in tension and compression. Due to its circular form it is ideal for resisting compressive forces.

To assist those who may have occasion to use standard pipes in this way and to make it as easy as possible for them, I have developed the following simple table and rules:

1. Knowing the load that is to be carried and the length of pipe needed, make a "guess" as to the size of pipe. Column A in the tables will help in making the guess as it gives the maximum length of pipe that may be used. Thus, never use ⅛" pipe, as an important column, longer than 14.5 inches. Never use a 3" pipe, as an important column, longer than 139 inches, and so forth.

2. Multiply the length of the pipe in inches by the corresponding figure in Column B of the table. This product should never be greater than 12,000. If it is greater than 12,000 it means that you have guessed a pipe that is too small. After getting the right size:

3. Subtract the product from 19,000. If the difference is equal to or less than 13,000 use it, in (4). If the difference is more than 13,000 use 13,000 in (4).

4. Multiply by the figure in Column C corresponding with the pipe size.

The result is the number of pounds that the pipe will carry as a column, strut, or "push member." If the result is less than the load to be carried, try again, using the next larger pipe size, and so on until the proper and most economical size is selected.

Size of Pipes, Ins.	Maximum Length, Ins.		
	A	B	C
⅛	14.5	826.4	0.07
¼	19.4	617.3	0.12
⅜	25	480.8	0.17
½	31.3	383.1	0.25
¾	40	300.3	0.33
1	50.6	237.5	0.50
1¼	64.7	185.5	0.67
1½	75	160.5	0.80
2	94.7	126.9	1.07
2½	114	105.3	1.71
3	139	86.21	2.24
3½	161	74.63	2.68
4	181	66.23	3.18
4½	202	59.52	3.68
5	226	53.19	4.32

For example, it is desired to support a load of 10,000 pounds at a height of 84 inches. What size of pipe should be used? Following the rules we do this:

1. "Guessing" the size of pipe, Column A shows that 84 in. falls between 1½" and 2" pipe. We will therefore try a 2" pipe.

2. 84×126.9=10,650. This is less than 12,000 and we will therefore continue.

3. 19,000—10,650=8,350. This is less than 13,000 and we may therefore use it in (4). If the difference were 18,350 we would have to use 13,000 in (4).

4. 8,350×1.07=8,950 pounds.

Since 8,950 pounds is less than 10,000 pounds, a 2" pipe is too small. We will therefore recalculate, this time trying a 2½" pipe.

2. 84×105.3=8,850.

3. 19,000—8,850=10,150.

4. 10,150×1.71=17,370 pounds.

This shows that a 2½" pipe would be amply safe to hold up 10,000 pounds. It shows that a 2½" pipe is capable of holding almost twice as much as a 2" pipe at a height of 84 inches. The small difference in pipe sizes and the great difference in a strength indicates the necessity of careful computation and the danger involved in guesswork.—*W. F. Schaphorst, M. E.*

Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

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WANTS OPINION ON CLAY

1,041. *Arkansas—I am sending you under separate cover a small piece of clay which was treated in the following manner. It was placed in a good heavy clean fire in a blacksmith's forge, and the blower used for about ten minutes. Then a piece of high carbon steel a half inch thick, about one inch wide, was laid on the top side of the piece and left there until the steel began to melt. It was then removed and cooled and again placed on the clay, taking it off again when the melting point was reached. This process was repeated three times so we know that we had the clay very hot. So far as we could tell the clay did not melt or soften in the least. We do not know what temperature we reached, but think it was pretty hot. We believe we can make a good fire brick from this clay and would like to have your opinion on this.. The black coating on the top of the piece of clay is the melted steel. The strata is 10 to 18 feet in thickness.*

From your description and the appearance of the burned clay we do not believe that it is a fire clay. At the same time, any experienced man will not form an opinion from such meagre information. In order to satisfy yourself on this point, we suggest that you get in correspondence with the ceramic department of the University of Illinois at Urbana, or the ceramic deparment of the University of Iowa at Ames. These institutions are equipped to run heat tests on your clay and determine the melting point and whether or not it could be used as a fire clay. They will require not more than 50 pounds, and their charge is very small.

* * *

HOW CAN A CHEAP KILN BE BUILT?

1,042. *Pennsylvania—I will appreciate very highly any information that might be extended to me regarding the building of a small kiln in which to burn brick and hollow building tile. It will be necessary that this kiln be safe to build and use in the fire limits of a city. A kiln of 20 or 25,000 brick capacity would suit me very well. I am anxious to build it as cheaply as possible and practical.*

This inquiry was received in the office of Brick and Clay Record and we pass it on to our subscribers thru these columns. If any of Brick and Clay Record's readers have any suggestions to offer, we will be very glad to forward them to our inquirer.

* * *

TROUBLED WITH INTERMITTENT WHITEWASH

1,043. *Illinois—We are writing you relative to a whiteness which appears on our brick, which has been a puzzle to us and thought possibly that you might have heard of similar instances where this same condition prevailed. We are expressing to you today prepaid a sample of our brick. When this brick was packed in the box it was practically snow-white. However, it is possible that when you receive the sample the whiteness will have disappeared, owing to its intermittent character. If you find no whiteness, you will find by placing the brick in the sun that it will appear again.*

The Application of Common Sense and What It Will Mean to You

For many years this organization has assisted clay plant operators to reduce their costs. By the application of common sense, we have made possible the saving of many dollars in the clay products industry.

Ask about Waller Crow Service today. We may be able to help you.

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CHICAGO

The FRINK Pyrometer

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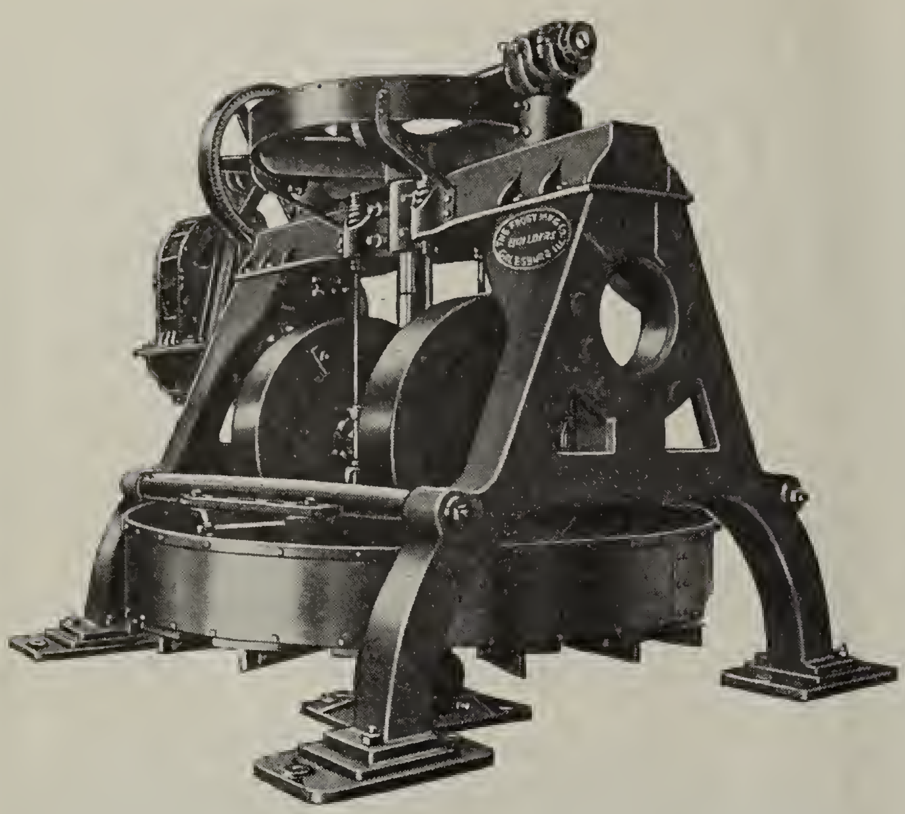
WRITE US TODAY

The Frink Pyrometer Company
LANCASTER, OHIO



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Gallagher Brothers
Uhrichsville, Ohio

We are bothered with this condition only at times when the coal is wet or when the air is heavy and damp, and as the coal is rather high in sulphur, we are inclined to believe that this residue is sulphuric acid or some combination of sulphur and water. This whiteness affects only the brick which are hardest burned around the fire boxes.

A peculiarity of this whitness is that it does not always appear immediately after the kiln is burned off and not knowing whether or not the white will appear later, there have been several instances where we have loaded clean brick from the kilns into the car and after the car reached its destination the brick were found to be practically covered with this white substance.

This is a great inconvenience to us. We have found, however, that after the brick are set out in the air for several weeks, and have been subjected to the rain, the white permanently leaves.

We have noticed that brick affected in this manner always appear clean in the early morning but invariably as soon as the sun strikes them they turn white.

We are under the impression that our shale or temper water has nothing to do with this condition, as our lighter burned brick which are a little distance from the fire pockets do not show this whiteness at all.

Our kilns are built on solid ground and we have never salted them.

We would like to know what this whiteness is and also any suggestions from you as to how to keep it from forming,.or after it has formed how can it be permanently eliminated?

It appears that your sulphur in the coal, especially when it is moist in the burning, forms sulphuric acid, which attacks the lime and magnesium that is always present in every clay, forming a calcium sulphate. The reason this may not appear immediately is because it may take some little time for the reaction to take place.

J. B. Shaw, professor of ceramic engineering at the New York State School of Clay-Working and Ceramics, Alfred, N. Y., has written as follows regarding this problem:

"The phenomenon described here is somewhat different from the ordinary phenomenon of whitewash in that this scum appears to be composed of some substance which is soluble in water. I could have replied to you much more intelligently had you sent me a sample of the brick and request that you consider the fact that this reply is only a theory developed from consideration of the data which you give me. It seems probable to me that this scum is composed largely of magnesium sulphate which is brought to the surface when the sun strikes the brick and deposits it from solution, being dissolved and carried away when the brick are subjected to rain. It seems probable that the clay or tempering water contains a very large quantity of magnesium carbonate, possibly in the form of dolomite. If this theory is right the only way to prevent this scum is either to eliminate the magnesium compound or use such care in selection of fuel and burning as to prevent the formation of the sulphate. The reason the scum is worse on hard-burned brick is simply the fact that these hard-burned brick are located in that part of the kiln which is subjected to the action of sulphurous gases from the fire box.

"If the company is interested in having this problem solved I would be glad to take it up with them directly if they will submit a sample. I am sure that there is no insurmountable difficulty here."

* * *

GLAZING DRAIN TILE

1044. *Ohio—We are working a surface clay of good quality. The clay burns like enclosed sample at 1,900 deg. of heat.*

We would like to ask you thru Brick and Clay Record, or by personal letter, whether or not this kind of ware can be cheaply and successfully glazed, and if so, what is used, where can we secure the material, and what would be the cost per kiln. The above information would be highly appreciated.

Your clay could undoubtedly be glazed by using some sort of a fluxing material which would affect the outer surface.

The cheapest and best method of glazing is to salt glaze as in sewer pipe manufacture. From page 64 of Clayworking Problems, we quote part of an answer given to a question asked by a Michigan manufacturer on the best way to put salt glaze on drain tile. The answer states:

"All clays are not suitable for glazing with salt, as it is found that a certain temperature (corresponding to cone 2, 2,138 deg. F., but more usually cone 7) is essential for the full development of the glaze, and that the proportion of alumina and silica must be within comparatively narrow limits. L. E. Barringer has shown that the most suitable clays are those containing about 63 per cent. silica and 23 per cent. alumina, but provided there is not less than three pounds or more than eight pounds of silica to each pound of alumina in the clay, a good glaze may be obtained. Some clays outside these limits can be salt-glazed, but will not give really good results. The state in which the silica is present does not appear to be important, and some clays which, alone, cannot be salt-glazed, will give excellent results when mixed with very fine sand, but coarse or medium sand cannot be used for this purpose. The best results are obtained with clays which begin to vitrify at the temperature at which the salt is added, but which do not lose their shape until a far higher temperature is reached.

"The kilns used in salt glazing may be single or continuous (chamber) kilns, tho there are disadvantages in the latter unless they are used exclusively for salt glazing. In most work it is, therefore, better to use separate down-draft kilns with a perforated or false bottom. There must be ample grate area in the fire boxes, and the generally accepted rule amongst the builders of salt-glazed kilns—viz., six square feet kiln area for each fire box—is generally satisfactory. As the damper in the main flue of the kiln is of great importance in salt glazing, care should be taken that it fits well and is kept in good order. The brickwork must be tight, as a good, sharp draft is needed during some parts of the firing. The goods are placed so that there is ample room for the salt to reach the faces to be glazed, but apart from this, they are set just as if they were ordinary glazed brick. To some extent the method of setting depends upon the number of headers and stretchers required to be set."

You will note from the above that the temperature required for glazing is considerably higher than the temperature at which the sample you sent us was burned. You might try to burn your clay a little higher and attempt a salt glaze, for it is only by experimentation that you can determine these things. The quantity of salt required varies, but 150 pounds of salt per 100 tons of ware probably represents an average figure.

With this information, we believe you can work out your glazing proposition to the satisfaction of knowing whether or not it is at all possible with your clay.

⁂

HOW MUCH WATER DRAINS WILL CARRY

1045. *Ohio—Have you any figures on the amount of water a three inch to eight inch tile will carry, and also what proportion more will a four inch tile carry than a three inch, and so on?*

The following information is taken from the book "Practical Farm Drainage," by Charles G. Elliott, and will aid you in determining the amount of water carried by various sizes of drain tile.

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Brick and Clay Industry

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Coal—No. 6		Clay—No. 3	
Water	2.200	Silica	59.84
Volatile Matter	35.540	Alumina	25.96
Fixed Carbon	54.705	Iron Oxide	1.68
Sulphur	1.725	Titanium Oxide	1.60
Ash	5.830	Calcium Oxide	.50
		Magnesium Oxide	1.08
		Sulphuric Anhydride	Trace
		Alkali Oxides	1.22
		Fusion Point	3020° F.

This territory is only 40 miles from Pittsburgh and the P. L. & W. R. R. connects with both the Pennsylvania and Erie Systems.

Write today for full particulars.

The Pittsburgh, Lisbon & Western R. R. Co.
Lisbon, Ohio

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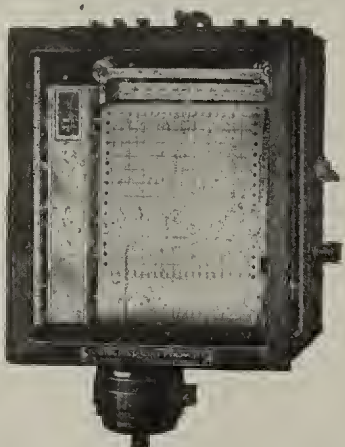

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Bulletins on Request

THE STEVENSON CO.
Wellsville Ohio

"Drains should be designed to relieve the land of surplus water during times of maximum rainfall, or seasons of continued precipitation which overcharges the soil beyond its capacity to provide for the excess by natural drainage. These seasons do not usually constitute more than one-tenth part of each year, yet if the drains fail to give adequate relief at such times, they do not serve the purpose for which they were made. They should, therefore, be constructed to meet maximum wet conditions which prevail in the locality, unusual, infrequent, and abnormal storms excepted. Where the annual rainfall ranges from 22 to 38 inches, the normal monthly rainfall is about three inches, the maximum precipitation during 24 hours not infrequently being from one to three inches. In providing for drainage adequate for agricultural lands under these varying conditions, we consider that the volume of water which must be removed by drains is regulated or limited by the reservoir capacity of the surface and soil, the evaporation of water from the surface and from the soil thru growing plants, and the length of time which the soil may remain saturated without injuring it or the plants growing upon it. These three factors may vary widely in their effect upon the final run-off of water thru drains, so that we must deduce from experience and observation a law that will meet the conditions within reasonable limits of precision. Figures or formulas to determine the volume of water which drains under certain conditions will discharge are of no value in solving questions relating to the size of main drains, unless the amount of water to be removed is fairly well determined. The mains and submains are the conduits for carrying away the excess of water from the soil, and their size should be proportioned to the rainfall, and the area and general slope of the land from which they receive drainage, without reference to the arrangement, number or size of the laterals used in the system. Under standard conditions of climate, surface, and soil, main drains with a capacity to remove one-quarter inch in depth of water from the area from which drainage is received, each 24 hours, will meet the requirements of good farm drainage, where the annual rainfall is 35 to 45 inches. This may be briefly described as the "quarter-inch run-off in 24 hours," in which it is assumed that the lateral system is sufficient to collect the drainage and deliver it to the mains.

The table indicates at a glance the size of outlet drain that should be used for any area when other factors are known. It was prepared by Poncelet's well-known formula for flow of water in pipes, so modified as to fulfil the conditions to be met in soil drainage.

"The modified formula for tile drains is:

$$v = 48\sqrt{\frac{d\ (h+1/2k)}{1+54d}}$$

In which v = velocity of flow in feet per second.
d = diameter of tile in feet.
h = total head of main in feet.
l = length of drain in feet.
k = depth of main at upper end in feet.
(assumed in computing table to be three feet.)

Also formulas

$$Q = av$$

$$A = \frac{Q}{.0105}$$

In which Q = discharge in cubic feet per second.
a = area of tile in square feet.
A = No. of acres for which the given drain tile afford an outlet.

Constant 0.0105 = quantity of water to be removed from 1 acre in 1 second of time.

"In close compact soils 1/2 k should be omitted from the formula in computing the velocity of flow in tile drains, the formula then reading:

$$v=48\sqrt{\frac{dh}{1+54d}}$$

"The rainfall is much greater in the Southern States than that for which the table has been prepared, and for which experience has proved it is well adapted. While it is not the amount of annual rainfall which taxes the capacity of the drains, but the amount which falls successively during 24, 48 or 60 hours, it is observed that heavy precipitation during short periods occurs in localities where the annual rainfall is large, tho this is not always true. However, the amount of annual precipitation may be used as an approximate guide in determining the sizes of tiles that should be used for mains.

Number of acres from which one-quarter inch in depth of water in 24 hours will be removed by a system of drains whose main is 1,000 ft. long, of the sizes given, and laid upon the grade indicated.

Diam. of Tile in In.	0.04 (½ in.)	0.05 (⅝ in.)	0.08 (1 in.)	0.10 (1 3/16 in.)	0.12 (1½ in.)	0.16 (2 in.)	0.20 (2⅜ in.)	0.25 (3 in.)	0.30 (3⅝ in.)	0.40 (4⅝ in.)	0.50 (6 in.)	.075 (9 in.)
Acres of Land Drained												
5	17.3	17.7	19.1	19.8	20.6	22.1	23.5	25.1	26.7	29.5	32.0	37.7
6	27.3	28.0	29.9	31.2	32.5	34.8	37.0	39.6	42.0	46.4	50.5	59.4
7	39.9	41.1	44.1	45.9	47.7	51.1	54.3	58.0	61.6	68.2	74.0	87.1
8	55.7	57.3	61.4	64.0	66.5	61.2	75.6	80.9	85.8	95.0	103.3	121.4
9	74.7	76.5	82.2	85.6	89.1	95.3	101.4	108.4	114.9	127.0	138.1	162.6
10	96.9	99.5	106.7	111.2	115.6	123.9	131.6	140.6	149.3	165.2	179.2	211.1
12	152.2	156.1	167.7	174.8	181.7	194.6	206.8	221.1	234.5	259.2	281.8	331.8
14	222.8	228.7	245.3	256.1	265.8	284.9	302.5	323.5	343.5	379.7	412.9	485.8
16	310.2	317.8	341.4	355.4	369.5	396.3	420.6	449.9	477.4	527.8	573.7	675.2
18	414.4	424.9	456.4	475.7	494.4	529.1	562.2	601.8	638.1	705.2	767.4	902.3
20	537.6	551.6	591.5	616.4	640.4	686.3	729.2	780.0	826.9	914.7	994.5	1,170.1

"The number of acres given in the table for which the sizes of tile opposite will afford an outlet should be varied to meet the rainfall conditions of different sections by the use of the following factors:

Where the annual rainfall is 50 in. multiply acres in table by .8
Where the annual rainfall is 55 in. multiply acres in table by .7
Where the annual rainfall is 60 in. multiply acres in table by .6
Where the annual rainfall is 30 in. multiply acres in table by 1.2
Where the annual rainfall is 25 in. multiply acres in table by 1.4

"The office of lateral drains we have seen is to collect the excess of water from the soil and deliver it to the mains. As before shown, it is necessary to place these at different distances apart and according to various plans, depending upon both surface and soil, to get the desired result. The size of the tiles in the lateral system is governed in part by the grades upon which they are laid. To secure the best drainage, laterals should rarely be filled. Ample size will facilitate aeration of soil and render constant the conditions which favor activity of soil bacteria, those important agents in the development of soil fertility.

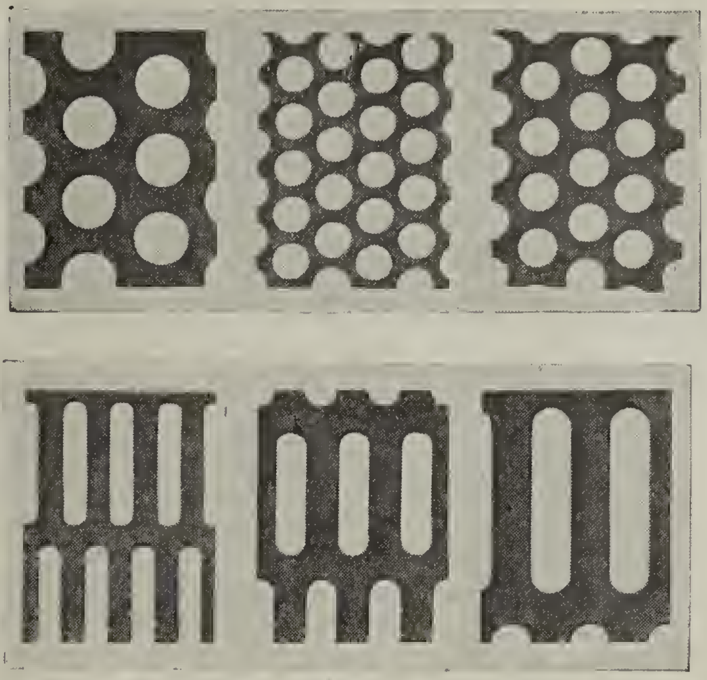
"Where soil is retentive, requiring drains as frequent as 40 to 60 feet, three-inch tile may be used. For greater distances, and more open soils, no smaller than four-inch are admissible, while five-inch and six-inch may be necessary under conditions where the laterals are practically submains to supplement natural drainage. In describing the size of tile, their inside diameter, measured in inches, is referred to, a six-inch tile being one whose inside diameter is six inches."

⁂

SANTA FE WANTS TO REDUCE RATES

The Santa Fe Railroad has applied to the utilities commision of Kansas for permission to reduce rates on brick and other materials from Lawrence to other Kansas points. The reductions amount to three per cent. to some points.

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

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USE R. & H. PRECIPITATE CARBONATE OF BARIUM TO PREVENT SCUMMING AND THEREBY PRODUCING BRICK THAT ARE RICHER AND DEEPER IN COLOR, CLEANER AND CLEARER IN APPEARANCE.

IF YOU ARE TROUBLED WITH SCUMMING, WRITE US TODAY FOR CIRCULAR.

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"Modern Firing"

is a book that should be read by every clayware manufacturer who has an eye to increasing his output, lowering his costs, improving his product.

"Modern Firing" shows how and why these desirable results are brought about by the installation of a Russell Tunnel Kiln. (Zwermann Patent.)

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MANGANESE

We wish to announce that our Sales Office has been moved from CHARLESTON, West Va., to WOODSTOCK, Virginia.

We are prepared to furnish you with the highest quality of DOMESTIC MANGANESE which is the BEST for the coloring of your clay products, and the supply is not subject to the uncertainties of importing.

We mine and very carefully prepare all of our own product and therefore guarantee that each shipment will be the same.

You can always duplicate your shades from our MANGANESE by using our MANGANESE.

Hy-Grade Manganese Company, Inc.
WOODSTOCK, VIRGINIA

The Letter Box

A Place Wherein Letters That Have General Interest Are Published and Commented Upon

AN EXPLANATION

In the article entitled "Repairing Broken Gear Wheel Teeth," appearing in a recent issue of Brick and Clay Record, appeared a statement to the effect that cut gears would be out of the question for use on most clay machinery. This statement caused some dissension by the manufacturers of cut gears, who contended that it was inaccurate. Gustav H. Radebaugh, author of the article, has offered the following explanation:

"In reply to your letter of May 9, you call my attention to a statement in the article entitled 'Repairing Broken Gear Wheel Teeth' wherein I state that on most clay machinery it would be out of the question to use cut gears. The cost would be prohibitive.

"This is of course not true in every case, as the cut gear is far superior to the cast gear in machine construction of certain design. This should have read 'on most clay machinery it would be out of the question to use *only* cut gears.'

"With the rapid development of gear cutting machinery and the very capable standardization that has been done by the cut gear manufacturer, the sentence as it was published is not correct as the cut gears in many instances can be supplied at nearly the same cost and often cheaper than the cast gear, especially when it is necessary to make a pattern to secure the cast tooth gear.

"This is a very interesting angle in the use of cut gears in replacing a broken cast teeth gear. Many times a repair can be made much cheaper by purchasing a cut steel or cut cast iron gear from a cut gear manufacturer than by having a pattern made for the cast teeth gears. Every designer prefers the cut gear to the cast teeth gear, yet in many designs both types of gears will be used."

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

L. F. GERDING DIES

L. F. Gerding, 69 years old, a former resident of St. Joseph, Mo., died at Beatrice, Neb. He was born at Venedy, Ill., and came to St. Joseph 32 years ago, when he became superintendent of the St. Joseph Press Brick Co. After 22 years of service there he became associated with Seaman & Schuske, until a year ago, when failing health made it necessary for him to retire. Six months ago he removed to Beatrice. He is survived by the widow, a son and three daughters.

J. A. GLANDON RETURNS FROM MEXICO

J. A. Glandon, representing the A. P. Green Fire Brick Co. of Mexico, is home from Tampico, Mexico, and reports business conditions generally as showing a marked improvement.

J. D. RAMSAY LEADS N. A. M. DISCUSSION

John D. Ramsay, president of the Elk Fire Brick Co., of St. Marys, Pa., and last year president of the Refractories Manufacturers' Association, led the discussion on a paper pertaining to the governing bodies of trade associations, at a meeting of the National Association of Manufacturers which was held in New York the week of May 8.

DONAHOE BECOMES ACTIVE A. C. S. MEMBER

At a recent meeting of the Board of Trustees of the American Ceramic Society, Frederic W. Donahoe, secretary of the Refractories Manufacturers' Association, was elevated from associate to active membership.

CHEBOYGAN COMPANY HIRES NEW MANAGER

The Cheboygan Brick & Tile Co., of Onaway, Mich., has engaged a new manager from Ann Arbor, who will get the plant in shape and start operations shortly. The directors of the company so decided because of the great demand for the products at good prices.

INCORPORATE FLOOR TILE COMPANY

The National Floor Tile Co. of Mobile, Ala., has been organized, a report states, with a capital stock of $144,000, all paid in. W. D. Bellingarth, Benigno Castro and W. M. Clemens filed articles of incorporation.

SOUTH BUYING SILO TILE

Besides the manufacture of sewer pipes the Southern Sewer Pipe Works, of Birmingham, Ala., manufactures silo blocks, drain tile, flue lining, segment ornamental chimney tops, glazed building blocks, septic tank piping and other products. All of these products are being manufactured in large quantities and are meeting with ready sale all over the South.

Recently a good demand has been created in various sections of the South for silo blocks, owing to the fact that in a number of Southern communities the farmers are turning their attention to stock raising and are building silos. This is true of the prairie sections of Alabama and Mississippi to a great extent, where a number of large silos have been erected recently. The silo block manufactured in Birmingham is a large yellow glazed block and makes a most beautiful structure.

SHIPS TILE TO CENTRAL AMERICA

For the first time in the history of tile making in Birmingham, Ala., this product is now finding a market in far off countries, as well as in the various Southern states and at home.

The Roper-Strauss-Ferst Co., whose plant is located in North Birmingham, is now shipping hollow and face tile to Ceiba, British Honduras. These tile are going into a hospital which is being erected there by the government. This is the first time Birmingham made tile have ever been shipped to any of the Central American countries.

Birmingham brick and tile makers say there is no reason why their products should not find a ready market in all of the countries of Central and South America, owing to the location and the transportation facilities offered. The ports of Mobile, Pensacola and New Orleans are easily reached by rail, while Mobile may be reached by the water route over the Warrior River, making a big saving in the rate as charged by railroads. Both passenger and freight steamers ply between New Orleans, Pensacola and Mobile and the ports of Central and South America. Several of the clay manufacturers of this section say they are going after this South and Central American trade in the future.

The Roper-Strauss-Ferst Co. has just added two new kilns to its plant, which will be in operation in a short while. These kilns were necessary owing to the increase in business of this firm during the past few months, it was stated.

TELLS ROTARIANS OF BRICK

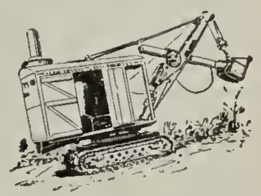
In an address before the Rotary Club, Ernest Peninger of the Fort Smith (Ark.) Brick Co. made the statement that about 150,000,000 brick are contained in brick buildings and streets of that city, 90 per cent. of which were made in Fort Smith. There is enough brick making material under the city, he said, to pave every road in Sebastian

"WITH ONE MAN and one ERIE Shovel, we easily get out 300 cu. yds. per day. This is sufficient to take care of the daily output at each of our 3 plants, but we could easily increase this output if necessary. In our opinion, the ERIE is *the* shovel."—*Edw. T. Conley, Sec'y, Bradford Brick and Tile Co., Bradford, Pa.* (Owners of 3 ERIES.)

For larger output than the above—500 to 600 cu. yds. per day, or more— it is advisable to use two men on the shovel. But when your plant requirements are not too great an ERIE and one man will serve.

We will be glad to send you data showing just what you can do with the ERIE. Write us.

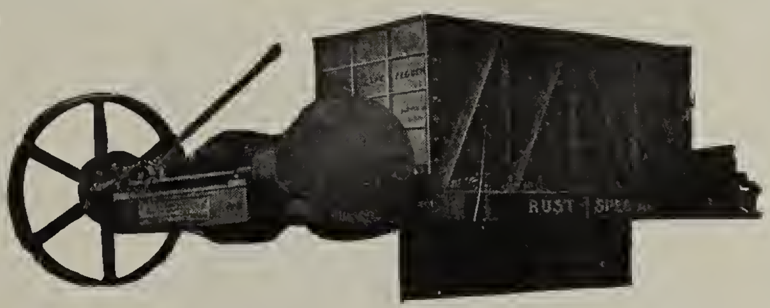
ERIE STEAM SHOVEL CO.
Formerly Ball Engine Co., Erie, Pa., U. S. A.
Builders of ERIE Steam Shovels
and Locomotive Cranes



ERIE Shovels can be had with broad tired traction wheels, standard gauge car wheels, or on ERIE lubricated caterpillar type mounting. All interchangeable on the same truck frame.

ERIE Revolving Shovels

ERIE Steam Shovel Co. Erie Pa.



The Marion "Rust Special" Is Second to None

The needs of the brick and clay plant are different today than they have ever been. Competition demands that production costs be REDUCED—that high speed production be resumed, and quality ware PRODUCED.

The clay products manufacturer who employs the Marion "Rust Special" Feeder Mixer to mix and temper his clay, is going to take the lead in 1922, because the Marion does reduce costs and does better the quality of the ware.

Ask about this machine today. An inquiry will not obligate you, but a purchase will repay you.

Marion Machine, Foundry & Supply Co.
P. O. Box 395
Marion, Indiana

"Sturtevant Drying Systems
Are Economical, Efficient, and Sure"

We maintain a special organization of competent engineers experienced in drying work, as well as a Research Laboratory for conducting investigations to determine correct and economical temperatures, humidities, and velocities of air for the successful drying of your product. We are prepared to furnish complete drying machines, trucks, and trays.

Our recommendations for your particular problem would not obligate you in any way.

B. F. STURTEVANT CO.
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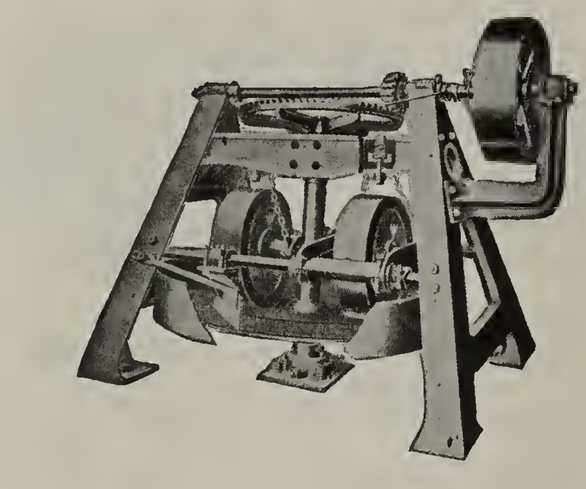
Offices in all principal cities.



EAGLE DRY PAN
COSTS LESS TO OWN—TO OPERATE

The purchase of an Eagle Dry Pan means a definite reduction in your costs. Although it is not the cheapest machine on the market, it proves to be the most economical in the long run.

Let us send you complete details today

EAGLE IRON WORKS
DES MOINES, IOWA

County 18 feet wide and keep it paved for 5,000 years. Mr. Peninger traced the history of brick from Biblical times up to the present.

RUNS PLANT AT CAPACITY

The San Joaquin (Cal.) brick works is running at full capacity, which means 10,000 brick per day. This company's first output has been sold.

INCREASED OUTPUT AT EXETER

During the past month the Southern Pacific Brick Co. turned out over a million brick from its plant at Exeter, Cal. This is the largest 30 day run the plant has yet made, and they have orders ahead for all they can produce for some time.

IONE FIRE BRICK CO. STARTS

The Ione (Cal.) Fire Brick Co. began operations in April with 35 men at work. The output is 20,000 brick per day. For several miles around Ione are continuous stretches of clay deposit, which seem inexhaustible. Brick made in the summer at this plant are burned in the winter.

NEW CALIFORNIA COMPANY ORGANIZED

Rio Oso (Cal.) Brick Co. in Sutter County, has been organized to manufacture and deal in brick, it is reported. The capital stock is given as $10,000, of which $2,500 has been subscribed by William Ensele, Myrtle Harder and Alma Greenwald.

PACIFIC COAST FEARS RATE INCREASE

Rather startling was the news to the brick and clay men of the San Francisco Bay region that the Southern Pacific company was petitioning the Interstate Commerce Commission for the sanction of rates two or three times those at present existing, with large advances to all intermediate points.

This was followed however by another schedule, based on the supposition that the competitive rates against water traffic between San Francisco and Portland would be permitted to continue. As a result, the shippers of San Francisco and adjoining territory are more at ease. The revised rates asked are based on a water competition amounting in the case of brick to $21. The railroad is meeting this with a rate of $27.50. The new schedule proposed will make this rate $32. But there is a proviso that in lots of 60,000 pounds the rate shall be reduced to $23. As the brick and clay people generally ship in large lots, they will therefore be in better position, if these rates are allowed than they were before. Considering the cost of hauling and loading and unloading, a still higher rate would be possible by the railroad without disadvantage in the matter of competition by water, but there remains the factor of a possible slashing at any time of water rates. This recently took place when in a rate war, the haul was made at $12.50. $12.50 for ballast is safer and more profitable than an empty ship.

The commission is taking the matter under advisement while continuing its investigations in other parts. The trade fears that there may be at work a feeling that the shipping interests should be more favored, and that the ultimate result may be that these terminal rates will be so raised as to exclude them from the northern markets.

FORT COLLINS MEN FORM ASSOCIATION

Manufacturers of brick and contractors engaged in brick work in Fort Collins, Colo., have organized the Fort Collins Brick Manufacturers' and Builders' Association, and have established headquarters at 133 West Mountain Avenue. Members state that the association does not aim to establish prices nor monopolize business, but desires to promote the use of brick as a building material. Information regarding building costs, and so forth, may be obtained at the offices. W. L. Davidson is president, and Harry G. Finley, secretary.

FIRE DESTROYS PARK BRICK CO.

With loss estimated at $150,000, the yards and plant of The Park Brick Co. at Elmwood, Conn., were swept by fire April 29, the office building and several employes' cottages being the only structures to escape the flames. Sparks from a passing locomotive are believed to have been responsible. Fanned by a high wind, the flames swept over the five acres owned by the company within 20 minutes.

The drying shed, which borders the main line of the New York, New Haven and Hartford Railroad tracks for about 200 feet, where the flames were first discovered about ten minutes after the passing of a train, was the first building to go. An unsuccessful attempt was made to save the big power plant. The wind being in the opposite direction was all that saved buildings of the Charter Oak Brick Co., which border the railroad tracks for about 150 feet on the opposite side from the burned buildings.

All That Was Left of the Machinery Room of What Was Once a Flourishing Plant After Fire Had Done Its Devastating Work.

At the offices of the Park company, it was stated that the only property to be rescued from the flames was two automobile trucks, several smaller automobiles and a number of horses. Among the buildings burned was the power station and heating plant, in which a new electric motor had been installed only about three days ago, the garage, barn, storehouse, kilns, drying sheds, private railroad with its cable cars, about 300 cords of wood and a considerable quantity of coal.

This plant had a capacity of between 6,000,000 and 7,000,000 brick annually. Plans regarding the rebuilding have not been announced as yet.

FORM NORTH AMERICAN CLAY CO.

The North American Clay Co., Wilmington, Del., has been organized under state laws with a capital of $1,520,000, to manufacture brick and other burned clay products, a report states. The company is represented by the Corporation Trust Co. of America, du Pont building, Wilmington.

CLAY WELL REPRESENTED AT ATLANTA SHOW

At an Own Your Home Show in Atlanta, Ga., held early in May, brick and clay products were well represented. Some of the most interesting exhibits were those of the

SECO

ECONOMICAL

The Poidometer will mean economy for you. It will mean a saving in labor and the elimination of loss due to cracked ware in the dryer.

The Poidometer will mix and temper your clay perfectly at the rate of from one and one-half to twenty-one thousand pounds per minute, and it does not even need attention.

Let our engineering staff cooperate with you

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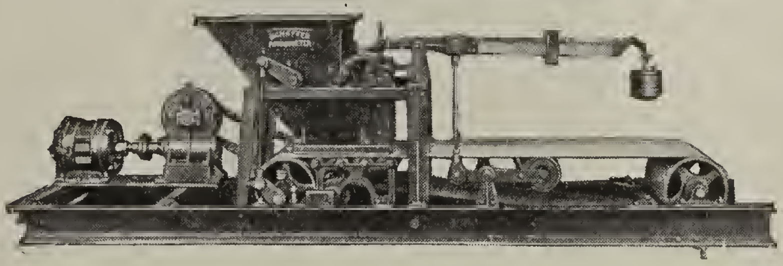
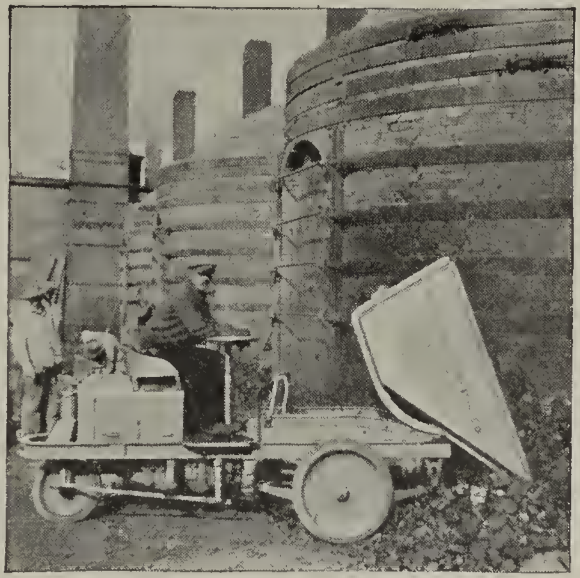


Here's a quick way to move your coal



A well-known brick and clay plant uses CLARK TRUCTRACTORS (automatic dump models) to handle coal—it's a speedy way.

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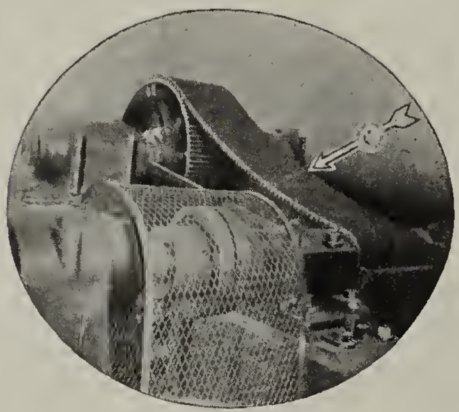

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Eight cents per word for first insertion; six cents per word for each additional insertion.

BRICK AND CLAY RECORD

following exhibitors: Southern Mosaic Tile Co.; V. H. Kriegshaber & Son; Southern Brick & Tile Corporation; Carmichael Tile Co.; B. Mifflin Hood Brick Co.

MARKETS OUTPUT OF THREE PLANTS

The Bibb Brick Co., the Cherokee Brick Co., and the A. T. Small Brick Co., of Macon, Ga., have decided to market their entire output thru one sales agency, the Standard Brick Co., which in the past has been the selling agency for the Cherokee Brick Co. W. E. Dunwody is president of the Standard Brick Co. This was done, it is said, because competition has recently been so keen that the manufacturers have been unable to make a profit.

ORGANIZE COMPANY IN CHICAGO

It is reported that a new Chicago concern to be known as the H. M. Thompson Co., Inc., 105 W. Monroe St., has been organized to manufacture and deal in fire brick and building materials. The company is capitalized at $25,000, and headed by H. M., Axel T. and Frank Thompson. J. Willis Dix, 940, 10 S. La Salle St., is named as correspondent.

TERRE HAUTE SHIPS TO SUMMITVILLE

Perhaps for the first time in 40 years a car load of tile was shipped into Summitville, Ind., recently for use there. Since the tile factories in Summitville have been idle for so long, it was found necessary to draw on the Terre Haute plant of the National Drain Tile Co. for a car.

ABANDON RAILROAD NEAR BRAZIL

The action of the Interstate Commerce Commission in granting permission to abandon the Chicago and Indiana Coal railroad, running north from Brazil, Ind., will leave 20 or more cities and villages in one of the state's richest districts without any railway facilities. A survey of the situation shows the clay interests will be more affected than the coal industry, most of the mines along the road having been worked out. The passing of the road brings to an end one of the chapters of the brick and coal industry in Indiana—the pioneer chapter. Time was when those cities affected were thriving little industrial towns in either one or both of the industries. Consolidations and abandonments have worked havoc, and much of the territory now is devoted to stock raising. The large clay plants from Mecca south have made arrangements with the C. I. & W. railroad to operate that section of the old line, and officials of these plants say they already are receiving far better service under the new arrangement than they did under the old when more than one train a day was a novelty.

REFRACTORIES DEMAND NOT BRISK

The Louisville (Ky.) Fire Brick Works is operating about half time at the Louisville and Eastern Kentucky plants, rocking along on four days one week and three the next and once in a while just two, the average being about three days. J. H. Bell believes that after the ordered reduction in brick and clay freight rates on July 12, business will be better, as it will be possible to reach a greater distance. The steel and metal working industries are steadily taking more material, the navy yards are taking a little, and the outlook as a whole is better.

LOUISVILLE PRICES MAY RISE

Altho building supplies are moving much better and there is a lot of business in sight, the demand for new brick in Louisville, Ky., so far has not hit its stride as well as had been anticipated.

The next 30 days will find some of the new building operations starting to take deliveries, and the situation is more promising. With coal up $2 a ton and labor a little stiffer, there is a strong prospect that there may be some advances in brick prices before long. One company today quoted $10 a thousand on salmon, delivered; $13 on hard and $22 on face. Some quotations are considerably above this level, one house showing $13 on salmon; $18 hard, and $22 face.

KENTUCKY SETTLES COAL STRIKE

So far the brick and clay industry and other producers of building supplies in Louisville, Ky., have had no trouble in securing all the coal required, altho prices have advanced until they are now about $2 a ton higher than they were just before the strike of April 1.

Kentucky mine run coal is costing $3.50 a ton to $3.75 at the mine, not including brokers' commission. Kentucky fields are now clear of all strike troubles, as a separate agreement was reached in southeastern Kentucky and eastern Tennessee between workers and employers.

The sharp advances in prices are calling forth some investigation on the part of Herbert Hoover, Secretary of Commerce. Industrial and other consumers are in the fields, with cash in hand, eagerly buying up bills of lading, and bidding the price up. It is foolish to expect the coal man to sell for less than the highest price offered him. Many of them lost money for six months prior to the strike, and are not going to miss any opportunities to recover.

SALMEN BUILDING NEW OFFICE

The Salmen Brick & Lumber Co. is erecting a handsome office building and salesroom on Carrollton Avenue, New Orleans, La. Salmen materials are being used thruout, with the exception of the tile roof.

BUILD NEW PLACE AFTER 87 YEARS

James Demourelle & Sons, Inc., of New Orleans, have completed their attractive new warehouse and office at Carrollton Avenue and Illinois Central crossing, and will no longer conduct business at the downtown office on the Old Basin and Toulouse Streets, where they were located for 87 years. The Demourelle concern handles a full line of building materials, and operates a brick plant near Covington.

DETROIT MEN SEE GOOD BUSINESS

Trend of building conditions is toward greater use of brick in the season's construction in and around Detroit than in former years, says Charles H. Bryan, president of the Common Brick Manufacturers' Association of America.

In the opinion of leading brick manufacturers there, the outlook for new construction is not only good, but upon a sounder basis than has existed since pre-war times and the tendency inclines toward finer residences as well as many more of them, which under the Detroit building code call for use of brick pretty extensively in many restricted sections of the city. Also there is a sound revival in construction of new public buildings, which will revive the brick demand briskly.

Money for building purposes is easier and solid brick and brick veneer apartment houses are being promoted and started in great numbers thruout the northwest portion of Detroit.

ISSUES FINE REFRACTORIES BOOKLET

A catalog containing useful information in connection with the use of fire clay brick has been issued by Evens & Howard Fire Brick Co., St. Louis, Mo. The catalog contains a description of various brands manufactured by Evens & Howard, and also illustrates various standard refractory shapes adopted by members of the Refractories Manufacturers' Association. The

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CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
GENERAL SHEET and
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DIESEL ENGINES
FOR CLAY PLANTS

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This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal types furnished.

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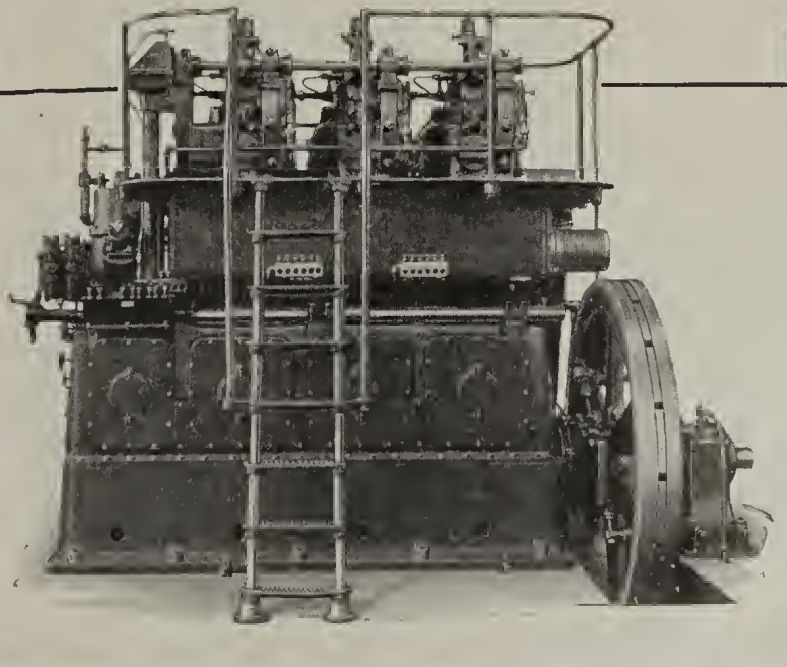
Formerly the American Clay Machy. Co.



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CONTINUOUS flights (without laps or rivets), and heavier flights on larger pipe, make Caldwell Helicoid Conveyor by far the best on the market. It is the recognized standard conveyor of this type.

The price is no more than for ordinary screw conveyor.

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Increase the value of your product by improving the color with

LAVINO
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Economical
Adaptable to any Clay
Intense Staining Powers
Various Effects Obtainable
Uniform Analytically and Physically

Liberal samples and full information gladly furnished upon request.

E. J. LAVINO and COMPANY
Bullitt Building Philadelphia, Pa.
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booklet contains other valuable information in the form of tables giving the number of shapes for fire brick required for cupolas, furnaces, and so forth. One page is devoted to the fusing points of Seger cones and other pages show comparison of Centigrade and Fahrenheit thermometers. Much other information likely to be of value to users of fire brick is contained in the book.

WANT BRICK ON MOBERLY ROAD

The state board of highways, at the urgent request of the persons living along the route, have designated brick as the material for building a road near Moberly, Mo. The brick to be used will be furnished by the Moberly Paving Brick Co. While the cost of paving by brick will be greater than by concrete, the property owners and the commission decided that the road would be so much more durable that brick was decided upon. It is said that the request for the brick among the persons interested in the road project was almost unanimous. When it was learned that brick was to be used the extension of the road was asked for to the country club and $8,000 will be raised by popular subscription and deposited with the county court to pay for this extension.

APPOINT RECEIVERS FOR OMAHA COMPANY

Fay H. Pollock, attorney, and John D. Dutcher, treasurer of the Nebraska Clay Products Co. of Omaha, have been appointed receivers for that concern, it is said. This company operates brick plants at Humboldt and Tekamah.

RE-ORGANIZE PHILIPS-HARPER

The Philips-Harper Co., East Hanover Street, Trenton, N. J., has been reorganized with Frank W. Harper as president and treasurer. The company will continue to represent the Raritan Hollow Tile Corporation, Keasbey, N. J., the Sayre & Fisher Co., Sayreville, N. J., manufacturer of brick, and other producers of burned clay products.

NEW MEXICO COMPANIES COMBINE

A report from Roswell, N. M., informs us that the Pecos Valley Brick Co. and the Roswell Brick Co. have been consolidated with Messrs. Davis and McAdams as managers.

ENTERTAINS ROTARY CLUB

Members of the Rotary Club of Las Vegas, N. M., recently visited the plant of the Las Vegas Brick Co. after their weekly luncheon. Arriving at the plant, the guests were fitted out in overall suits, and thus equipped were conducted thru the various departments by M. M. Sundt.

GRANTS FIVE CENT WAGE INCREASE

Employes at two clay products plants of George J. Markley at Mineral City, Ohio, have been granted an increase of five cents an hour in wages. Two sewer pipe plants in the Uhrichsville district have changed from a nine to a ten hour basis of operation.

DEEGAN BRICK & TILE CO. SOLD

The Deegan Brick & Tile Co. at Coal Grove, near Ironton, Ohio, has been purchased by the Coal Grove Brick & Tile Co. of Huntington, W. Va. The new owners will start operating as soon as the Deegan company removes manufactured stock from the yards.

COAL STRIKE DOES NOT STOP WEBSTER

The plant of the Webster Brick Co., at South Webster, Ohio, will not be forced to close because of the order of the Ohio miners' organization directed against miners producing coal for the producing of clay products, as this company is not unionized in its coal mining department.

COLUMBUS DEMAND INCREASES

Emmet Howard. of the Columbus Fire & Face Brick Co. reports a steadily increasing demand for face brick and other clay products. Building operations are progressing satisfactorily as a rule, and the demand for brick is gradually expanding. Prospects for the future are said to be exceedingly bright.

OHIO DRAIN TILE SELLING FAST

The drain tile situation in Ohio is acute in many ways. A canvass of the situation shows an unusually strong demand for all popular sizes of drain tile, and the supply is practically nil. Plants manufacturing drain tile are being rushed to capacity, and the product is quickly disposed of. Because of the fuel situation, which means both the scarcity of coal due to the strike and the higher prices prevailing, an advance in the price of drain tile of approximately ten per cent. is looked for soon.

OHIO PAVING BRICK MEN BUSY

The Ohio Paving Brick Manufacturers' Association held a meeting in Columbus, Ohio, recently for the purpose of discussing current questions. The members are generally busy manufacturing against the good strong demand for paving brick from both the state government and from municipalities. The scarcity of coal is not affecting the paving industry to any great extent, as many of the companies manufactured last winter in anticipation of the coal strike, and some have large reserve stocks on hand.

MAY CUT OFF COAL SUPPLY FROM PLANTS

The recent order of the Ohio organization of the United Mine Workers of America ordering all union miners to cease work where employed in mines producing coal for the burning of clay products is being combatted by union brick workers thruout the Hocking Valley district of Ohio. At least 2,000 brick workers will be thrown out of employment when the order becomes effective, and steps have been taken to have joint meetings between officials of the miners and the brick workers' union in an effort to have the order rescinded.

In previous coal strikes men employed by brick and clay products concerns which owned their own mines and only mined for the burning of brick were not affected, as permission had always been given for them to operate. But it is claimed by the miners' union officials that some coal mined on these special permits has been sold commercially and thus causing the rescinding of the permission. At the time of the issuance of the order, May 15, a leeway of eight days was given for the burning of kilns already laid. This time is now up, and quite a few plants will be compelled to close until the order is rescinded. Plants affected will be the Ironclay Brick Co. and the Claycraft Brick Co., at Shawnee; the Impervious Brick Co., at Straitsville; plants at Nelsonville and Logan, and the plant of the Hocking Valley Products Co. at Greendale.

INCREASES CAPITAL STOCK

The Muskogee (Okla.) Vitrified Brick Co. has increased its capital from $100,000 to $125,000, a report states.

OREGON COMPANY ELECTS OFFICERS

The Oregon Face Brick Co., Willamina, Ore., has elected the following officers: President, Dr. Andrew Kershaw; secre-

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FIRE CLAYS

Anness Fire Clays have several advantages which make them especially successful. They are infusible, having an exceedingly high melting point. They resist all mechanical corrosion, and will withstand sudden changes without cracking.

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The Pan For You To Buy

The Toronto Type "B" Dry Pan is the Pan for you to buy. It means rigid economy, better service, and a better quality of ware.

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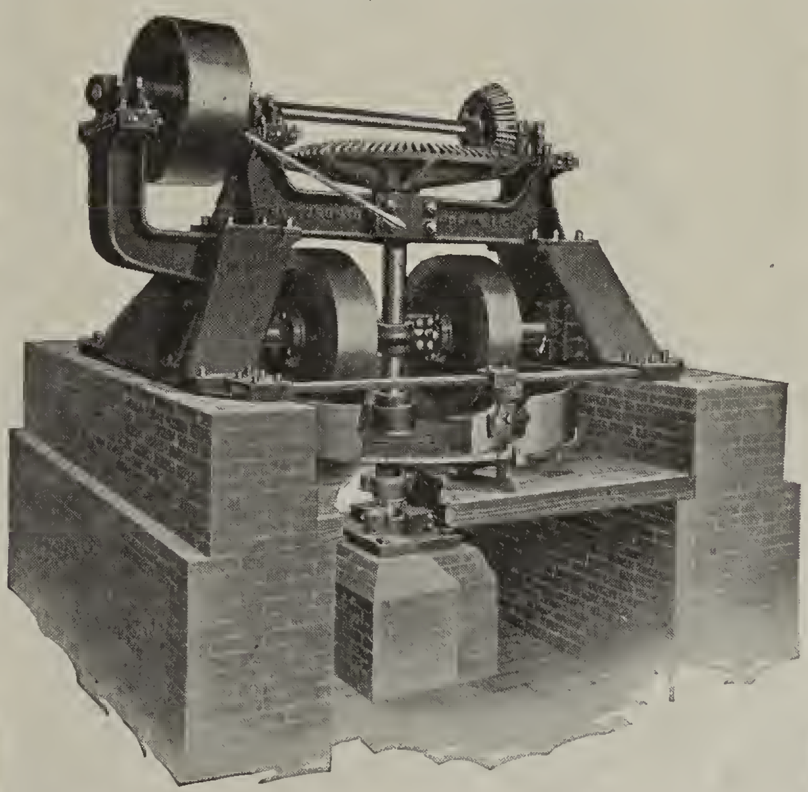

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We also manufacture a complete line of stacks, tanks and other steel plate work of high quality.

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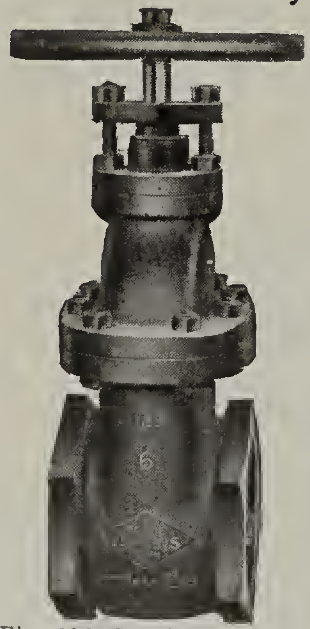

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Double face, solid wedge type. Body and bonnet of high grade cast iron. Bronze spindle and seat rings. A durable valve throughout made for maximum service.

Wedges have guides which are fitted to slide true and easy on ribs in body and thus prevent disc from chattering when partially open, or from touching seat except at point of final closing.

Valves can be packed when wide open and under pressure.

Know the genuine by the Jenkins "Diamond" and signature.

Fig. 325, Jenkins Standard Iron Body Gate Valve with inside screw, and stationary spindle, screwed ends.

JENKINS BROS.
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Jenkins Valves
SINCE 1864

tary and treasurer, Harry M. Kershaw; vice-president and general manager, Robert S. Shelly. The company is putting on a dozen new men, and has machinery and furnaces well along preparatory to the season's run.

BRICK PLANT TO RESUME WORK

The Hazleton (Pa.) Brick Co., is arranging for the early resumption of operations at its plant, where production has been curtailed in recent months due to lack of orders. It is expected to run under regular manufacturing schedule, giving employment to a sizable working force.

GLONINGER PLANT NEAR COMPLETION

The plant of the Gloninger Brick Co. at Vanport, Pa., in the Beaver Valley district is rapidly nearing completion and it is expected that operation will be started within the next few months. The main buildings were destroyed by fire several months ago and the loss was estimated at about $75,000.

GLEN-GERY BUILDS LARGE TUNNEL KILN

What is said to be the largest brick burning kiln in the world has been placed in operation by the Glen-Gery Brick Co. at the company's plant at Wyomissing, Pa. It is a tunnel kiln 514 feet long, 85 feet wide, with a capacity of 100,000 brick daily. A feature of the kiln is a continuous drying tunnel on top thru which the brick pass before going into the kiln proper.

NATIONAL INCREASES TILE PRODUCTION

The National Fireproofing Co., Pittsburgh, Pa., is increasing production at its various plants in the Raritan River section of New Jersey, and at other points. The company has booked a number of important orders in recent weeks, including the hollow tile fireproofing for the Federal Reserve Bank building, New York, approximating about 1,000,000 square feet. The company will also furnish a large quantity of vitrified clay conduit for use at the Liberty tunnel, South Side, Pittsburgh.

REELECT HARBISON-WALKER OFFICERS

Stockholders of the Harbison-Walker Refractories Co. were told of a material business improvement by President J. E. Lewis at the annual meeting held at Pittsburgh, Pa., recently. Secretary P. R. Hillman said that the coal strike has not affected the refractories industry. The old board of directors was reelected and the quarterly dividend on the common and preferred stock was declared. The following directors were named: H. W. Croft, Hamilton Stewart, O. M. Reif, J. J. Brooks, Raymond Rilley, J. E. Lewis, R. W. Harbison, T. L. Chadbourne, Jr., William Walker, N. McQuillan, Kenneth Seaver, R. H. Youngman, J. E. MacCloskey, Jr., J. F. Fletcher and J. B. Cullum. The following officers were elected: President, J. E. Lewis; vice-presidents, O. M. Reif, Hamilton Stewart and N. McQuillan; secretary, P. R. Hillman; and treasurer, William Walker.

ORDERS INSURE CONTINUOUS OPERATIONS

The Highland Brick Co. at McEwen, Tenn., has enough orders booked to run continuously thruout the summer. The plant operates six days a week and employs 35 men.

NEW TENNESSEE BRICK PLANT

According to a report, J. L. Jones of Greenback, Tenn., is planning the building of a modern brick plant with a daily capacity of 30,000. The plant will be located on the L. & N. R. R. near Greenback. The company is to be known as the Greenback Brick Works.

SEND MANY BRICK TO MEXICO AND CUBA

Chattanooga, Tenn., brick plants are maintaining capacity production, and during the coming month it is estimated that over 2,000,000 brick will leave the city for export to Cuba and Mexico. The plant of the Key-James Brick Co. in that city has made a record for production during the past two years, having produced to capacity all thru the period of depression.

BUILDING COSTS DOWN IN EL PASO

A drop of 15 to 20 per cent. from building costs of 1921 has been noted in El Paso, Tex., according to reports made by the city engineer. Prices of brick and lumber are still somewhat higher than before the war.

SEEK TO PUT PLANTS OUT OF BUSINESS

The Virginia legislature, at its last session, passed a bill which prohibited permanent uncovered excavations exceeding 5,000 square feet in area and five feet in depth, within half a mile of a subdivision which has been dedicated and recorded five years prior to the passage of the act. This action was taken at the request of a delegation from Arlington County. The effect of the act would have been to put all the brickyards in Arlington County out of business, so Attorney G. L. Boothe went to Richmond and interviewed Governor Trinkle, who vetoed the bill.

SUBURBAN BRICK AGAIN OPERATING

After a suspension of about four months, during which time extensive improvements were made, the Moundsville (W. Va.) plant of the Suburban Brick Co. resumed operations the latter part of April. It was expected that capacity production would be reached in a short time.

WISCONSIN PLANT STARTS WORK

Operations have been begun at the plant of the Stanley (Wis.) Brick Works with 35 men. A good demand is experienced and a large amount of brick will be manufactured during the season. Louis Hylland is superintendent.

⁂

The Dominion Sewer Pipe Co. will open their brick plant at Aldershot immediately.

⁂

W. McCredie, Lyons, Ont., has sold his tile plant to Mr. Reid.

INCREASES CAPACITY 30 PER CENT.

The Nova Scotia Clay Works, Ltd., Amherst, N. S., manufacturers of brick and tile is building two new periodic kilns 67x23 feet to cost $15,000 and with a capacity of 150 M. This will increase the capacity of the plant 30 per cent. The new kilns are for face brick.

BUILDS SAND-LIME PLANT

The Don Valley Brick Works is teaming out 300,000 brick per day. This company had faith last winter that there would be a revival of the building business this year and manufactured brick to the capacity of the plant all winter. The company has been under the expense of clearing off an overburden which will make a good sand-lime brick. The logical thing was to install a sand-lime plant and this is being done. The plant will have a daily capacity of 22,000. The lime will be hydrated by steam, insuring thoro work. Automatic measuring and mixing machinery and labor saving machinery will be installed. Sand will be dried before using. The dryer will be of the rotary type. The lime will be handled by a new system.

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10 to 12 tons of coal per kiln,
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The Sunbury Automatic Car Unloader will unload your coal at the rate of 30 to 50 tons per hour, and will reduce your labor to one man.

Can you afford to be without this machine?

Ask for more detailed information TODAY!

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The New Model "F"
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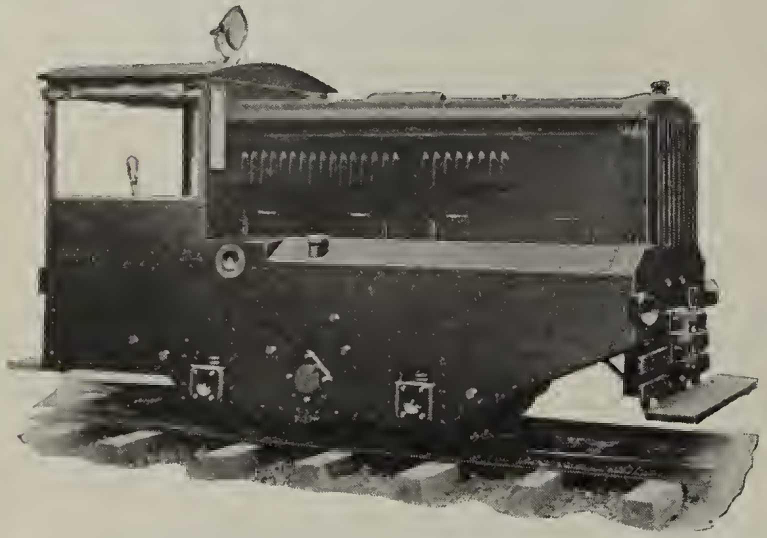

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407 S. Dearborn St. Chicago, Ill.

SHIPPING BRICK AS FAST AS MADE

Within the past fortnight Shale Products, Ltd., has opened the plant at Inglewood. Price & Cummings, New Toronto, are sold out for the season and are refusing orders. The Inter-provincial Brick Co., with plants at Cheltenham and Milton, are running to capacity and are shipping all they can make.

The Milton Pressed Brick Co. ran its three plants last winter, two at Milton and one at Streetsville, in expectation of a rush this year. Shipments from these plants are being made at a rate of double the capacity of the plant and the company is completely sold out of some ranges. J. S. McCannell states he has been wanting such a situation for the past seven lean years and the company is not going to complain because they have to work hard for long hours.

CANADIAN BUILDING TOTALS RISE

Brick manufacturers of Toronto and Hamilton are smiling these days with the great increase in building construction that is going on in these two cities and their vicinities. In Toronto the city architect issued permits in March for $2,852,960, as compared with $1,806,572 for the same month last year. For April the permits issued were $3,555,325, as compared with $2,617,268 for April last year. The same situation exists in York County and the villages of Mimico, Swansea, New Toronto, Todmorden surrounding the city and reached by the city electric lines or suburban lines. In York County which lies along St. Clair and Danforth Avenues chiefly, the permits issued in April amounted to $1,521,150. Practically all the construction is brick or hollow tile with the exception of some steel and concrete used in a few very large buildings.

ORDERS THREATEN TO SWAMP PLANTS

"We have never experienced such activity in brick as we are having at present," said the manager of one brick company at Toronto to Brick and Clay Record's representative. "The demand will fall off later, but even so, there is enough new work in prospect to guarantee an active building season in Toronto and to a lesser degree in other parts of the province. In one day recently we shipped 386,000 brick. It indicates clearly that building is progressing on a more active scale than most people realize. Most of the orders are of small size, but in the aggregate they amount to a great deal. Stores and residences are in process of construction in almost every part of Toronto. The building trades are being employed in greater measure than for several years."

Another manufacturer stated that "we are running to capacity but in two weeks we will not be able to keep up with the demand." The brick producers who manufactured for stock during the winter months are profiting by their preparations in the activity of the present season. Such reserve stocks are being cleared out rapidly. Current production has not been equal to the demand for the past three weeks. The coal strike does not affect the brick business to any extent. The large producers have made provision for a supply of fuel for a protracted strike and there is no anticipation of a slackening of production by reason of coal shortage.

Brick companies are becoming cautious about promising deliveries and at present rate of business orders will have to be placed well in advance to secure delivery on time.

THE BUILDING SITUATION

(*Continued from page* 843)

three times the amount of the corresponding period of a year ago.

With a normal building total averaging from $400,000 to $500,000 a week, Newark, N. J., has registered a week of over $1,000,000, in new construction during May, and the totals for this month, when official figures are available are expected to show the highest average for any similar period during the year.

In the Oranges, and at Montclair, and other West Essex communities, heavy dwelling operations are under way, and every material supply dealer is bending efforts to answer the call for brick and other basic commodities.

Philadelphia Advances

Weekly averages in Philadelphia during May indicate a volume of work exceeding the $10,000,000 for the month. With brick dwellings running into heavy totals, industrial work is beginning to respond to the building movement, and thousands of dollars worth of operations of this character are now in sight. Neighboring sections such as Easton, Allentown, Reading and Wilkes-Barre are rounding out heavy construction advances, ranging from 80 to 200 per cent. as compared with this same time of a year ago.

There is a keen call for pressed brick at Philadelphia, and to such marked extent that producers in the Eastern Pennsylvania district are beginning to refuse orders for anywhere near reasonable time of delivery. Practically every plant of this character is running full, and a call has come for more workers; the present supply of labor rapidly is being depleted. An advance from the $16 wholesale level, now prevailing, is expected.

Industrial Building at Baltimore

Indications point to a rapid return of industrial construction activities at Baltimore, Md. The opening up of the steel plants in the Sparrows Point section, is bringing a demand for refractory materials, while common brick continues as the leader among all other commodities used in construction. The month of May, now closing, is expected to show another advance in two-story brick dwelling construction, which for many weeks past has formed a feature of local operations; work of this kind is running from $300,000 to $500,000 weekly.

Construction Going Ahead in Cleveland

The building situation in the Cleveland, Ohio, district is better than it has been for the past two years. Construction of all kinds is going ahead on a firm basis and the recent rise in both labor and material prices is having a good effect, as prospective building interests seem convinced that costs will rise for some time.

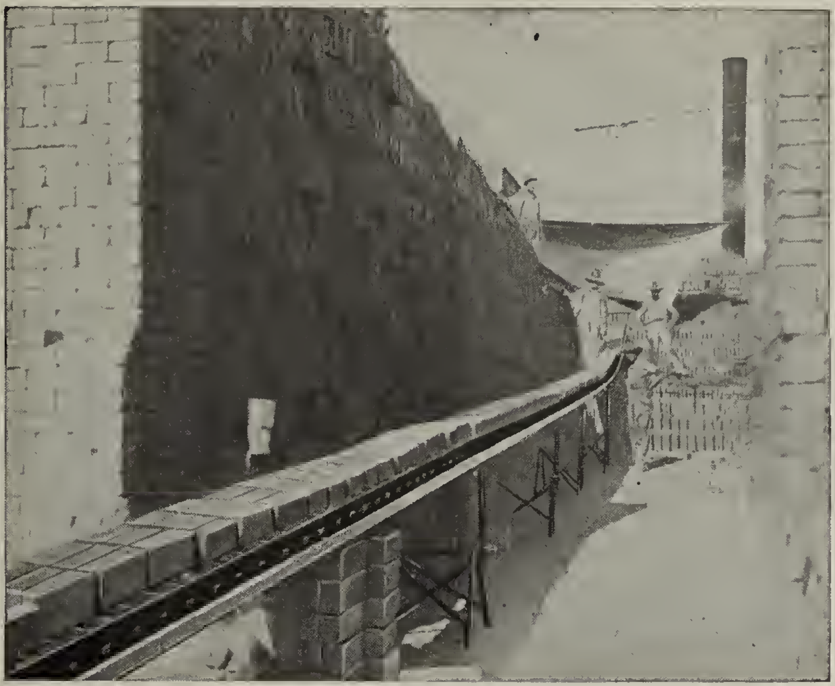
Dwellings, especially, are eclipsing former records. The coming of summer prefaces even a greater number of building projects. Various lake allotments are being opened up, and real estate companies are financing building of cottages and homes in such a way that people in moderate circumstances are able to invest in them.

Money for building is comparatively free and larger building projects are beginning to appear. Bids are being asked on some of the biggest developments in the history of the city.

Labor costs are the only remaining obstacles to complete prosperity. Instead of a pay reduction the greater number of building crafts got a raise thru the recent strike, but even this factor is discounted by the many favorable developments.

Chicago Totals for May Big

Figures from the Building Commissioners office show that permits for 229 apartment buildings, 376 residences, and 167 other structures were taken out in Chicago during the first 17 days of May, 1922. The permits set a new high record for values during the time, totalling $14,571,800 and indicate that the building boom will surpass the predictions of the most enthusiastic earlier in the year. These figures prove conclusively that the campaign and efforts of the Citizens' Committee to enforce the Landis Award have been an entire success. Latest reports from that body state that it has been decided to organize for a two year campaign. Open shop is now being maintained in 12 unions and the other 20 are strictly adhering to the de-



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PAY FOR THEMSELVES

If we could trade the dollars and cents we receive yearly in sales of STANDARD BRICK CONVEYORS for the saving secured through their employment, we would gladly make such an exchange.

In addition to the large saving in cost of handling brick, there is the satisfaction of having at your INSTANT COMMAND a means of quickly emptying the kilns into cars or storage piles.

The following well known brick manufacturers testify to the fact that their Standard Brick Conveyors have paid for themselves.

Collins Brothers, Kansas City, Mo.: "We now have 100 feet of your ball-bearing roller conveyor in operation. Our Superintendents advise that in unloading six carloads of brick they have paid for themselves in time saved in labor."

Deming & Thompson Co., Frankfort, Ind.: "Replying to your letter of July 17th, regarding the conveyor that we purchased from you on May 26th, we have used this in unloading lumber, cement and brick, and find the saving in time will soon pay the entire cost of the outfit."

Write for more complete information

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Representatives in all principal cities

Looking toward the charging end of a Harropp continuous kiln (insulated with Nonpareil Brick) 323 feet long. Mt. Clemens Pottery Company, Mt. Clemens, Michigan.

No More Cheap Fuel

NEVER again will fuel be cheap and plentiful enough to throw away. That day has gone forever and the fuel wasting kiln must go with it. The average uninsulated kiln loses 25% or more of its total heat—actually throws that much fuel out into the air by conduction and radiation from walls and crowns. Just stand beside one and see.

By substituting a single course of Nonpareil Brick for one course of common brick in the setting, you can save two thirds of that loss—a net economy in fuel alone of 10% to 15%. Worth saving, isn't it? And equally worth while is the temperature control which Nonpareil Brick insulation affords, reducing the risk of uneven burning and the consequent loss in defective ware.

What Nonpareil Brick save pays for them many times over.

In the 72-page book, "Nonpareil Insulating Brick," is a section on kilns with some valuable data on heat losses and how to stop them. Write for a copy and a sample brick—free.

Armstrong Cork & Insulation Company
149 Twenty-fourth Street Pittsburgh, Pa.

Nonpareil Insulating Brick

For Kilns and Boiler Settings

cisions handed down by Judge Landis in September, 1921.

Brick, both face and common, is enjoying extensive sales and manufacturers are operating their plants to capacity to supply the demand. For the first time in years all ten plants of the Illinois Brick Co. are operating and every one is being operated to capacity.

Machinery and Equipment

Descriptions of Machinery and Accessories and Detailed Announcements that Our Advertisers Believe Will Interest Our Readers

MOTORIZATION OF CLAY PLANTS

Some manufacturers of clay products are keeping pace with the times and are introducing up to date handling methods, but it is fair to say that as a whole there is a tremendous chance in the industry for labor saving equipment. The attention of brick manufacturers, for instance, has been centered on the machinery of actual production, while the secondary work about the yards has been left in relatively crude condition.

Other tonnage industries have been rearranged and motorized so as to largely eliminate manual handling. 25 or 30 years ago the man and wheelbarrow type of materials handling was still common in foundries, steel mills and other tonnage plants. Today the unit quantities handled are much larger in size and mechanical equipment is making the transfers at much lower cost.

Undoubtedly complete redesign of kilns and yard layouts will permit the clay industry to accomplish similar savings along similar lines, but even with the common type of brick plant there are economies which can be introduced without general rearrangement, by means of mechanical handling devices, as for instance in the movement of coal to kilns, haulage from kilns to cars or storage, or from storage to cars. Much of this work is still done with laborers and wheelbarrows or horse carts and wagons.

It is probable that part of the yard work will be deanimalized very rapidly in the next six months, as conditions now are more favorable than for a long time past.

Until the last two or three years there had been few, if any, properly perfected mechanical devices which would stand up under the rough conditions in the clay industry. Conveying devices for outside work, and industrial tractors in particular have made a permanent place for themselves only since the war and few of them found their way into actual service in the clay products industry before the industrial depression. There is, therefore, a limited amount of data available on the dividends paid to the industry by these machines. The most convincing large scale proof of the possibilities is obtained from other industries where in the last two years an abundance of recorded evidence has accumulated to prove the earning ability of machinery over muscle. Glass works, steel plants, foundries, chemical works and a score of types of industries have introduced mechanical haulage in their plants and yards with excellent results.

The industry which is shifting most rapidly in this respect and which at the same time most nearly approximates the yard transfers of the clay industry is the lumber industry. The hauls from dock or cars to mill, from mill to storage and storage to shipping point are comparable to the hauls from kilns to storage, storage to cars, and so forth.

The biggest development in lumber yard motorization came in the Northwest in the last few years and came with a rush upon the appearance on the market of even a half way suitable machine. Since then in spite of the following collapse in lumber prices and temporary depression the motorization has gone on and has spread to the large operators in the South as well as to the smaller yards and finishing mills of the Middle West and East. The depression in fact has operated peculiarly to the benefit of motorization for it has brought home to manager after manager the folly of maintaining expensive stables of horses which practically cost as much on a non-working as on a working basis. Those who in the recent depression had rid themselves of their stables and depended on tractors for occasional work were well paid for their foresight.

The following tabulation furnished by The Towmotor Co. of Cleveland shows some results recently reported by five different companies which had motorized their lumber haulage.

Company No.	Displaced per Towmotor & Driver	Saving per Annum per Tractor	Per cent Return on Tractor Investment
One—	One 2-horse team and driver One 5-ton Truck and driver	$4705.00	241 percent
Two—	Two 2-horse teams and drivers	1400.00	71.7 percent
Three—	Three 1-horse Wagons and 2 drivers	1314.50	67.4 percent
Four—	One 2-horse Team and Driver and two laborers	1902.00	97.6 percent
Five—	Five Laborers	3610.00	185 percent

These reports were taken at random and cover the results of companies from a small yard having only three one horse wagons to typical ones of the largest size in the East and Middle West which are just commencing their motorization.

It is, of course, true that some brick plants are so congested that special arrangements will first have to be made before complete motorization will be possible. The tractors on the market, however, are small in size with short turning radius and should be applicable to a large percentage of the yards in this country. The better tractors are capable not only of handling yard transfers but also are suitable for cross town hauls for companies delivering to local consumers.

The general subject is a matter for the careful consideration of the managers of all yards in the industry where the margin of profit is at best none too large.

* * *

VOLUME ON FUEL AND REFRACTORIES

"Fuel and Refractory Materials," by A. Humboldt Sexton, is the name of a new publication just off the press which has chapters on the following subjects: Combustion—Heating Power of Fuels—Fuels: Wood, Peat, Coal—Solid Prepared Fuels: Charcoal, Peat-Charcoal, Coke—Coal-washing—Liquid Fuels—Gaseous Fuel—By-Products and Low-Temperature Carbonization—Furnaces for Metallurgical Purposes—Supply of Air to the Furnace—Removal of Waste Products—Smoke—Prevention of Smoke—Pyrometry—Calorimetry—Utilization of Fuel—Testing Fuels—Refractory Materials—Bricks—Crucibles.

Brick and Clay Record has glanced thru the volume and finds that it contains little of interest to recommend it to the manufacturers of clay products. The book was prepared by an English author and many of the discussions apply mainly to English practice.

Brick and Clay Record does not recommend the purchase of this volume, but to those who desire to secure it, it may be had thru our book department for $4.

"HURRICANE" DRYERS

Drying Electrical Insulators

THIS TUNNEL DRYER was the means by which one large plant, manufacturing high tension electric insulators, cut more than a week from their manufacturing schedule. It now takes but 48 hours to completely and uniformly dry this ware. It previously required from ten days to two weeks.

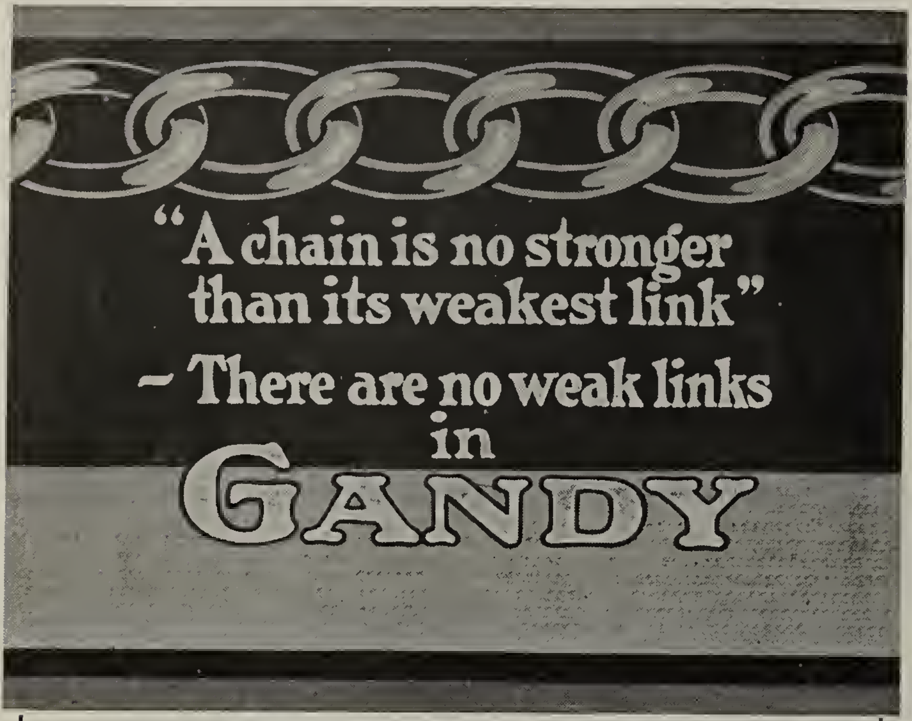
Shrinkage checks are practically nil, as the drying conditions are always under automatic control. Breakage due to handling is eliminated since the ware is not touched from the time it leaves the green finisher until after it has been dried, and ready to be dipped. The insulators are handled on rubber wheeled trucks, being progressed through the dryer by an automatic pushing apparatus, at regulated speed. Even the heaviest pieces are turned out in excellent shape.

It gives complete satisfaction to know that you have dependable equipment that consistently turns out your ware in fine condition, precisely on schedule. Have You?

You can rely on "Hurricane" Dryers. Let us describe to you the possibilities of these machines at your plant.

Send for complete details, NOW.

The Philadelphia Drying Machinery Co.
3351 Stokley St., Philadelphia, Pa.


"A chain is no stronger than its weakest link"
– There are no weak links in
GANDY

An Endless Gandy is Endless—Not Just Spliced

GANDY BELTS when ordered "special endless" are made that way in the process of manufacture. The joint is made during the process of folding and stitching. For long wear, there is no difference between the juncture and any other part of the belt. There is no weak link in Gandy.

This Gandy method illustrates the care exercised to build maximum strength, rugged endurance and lasting quality into every part of Gandy Belting. The same scientific methods apply throughout its manufacture.

Advanced methods, finest materials and trustworthy workmanship show up on your books in better service, and belting economy. For more than forty years, Gandy, the original stitched cotton duck belt, has been giving superior service and longer belt life in all classes of installations. Driving in brick plants; conveying crushed stone and other abrasives; carrying wet clay—these are the kind of services where Gandy makes its reputation.

Put Gandy stitched cotton duck belt in your plant; on drive, elevator and conveyor, and profit by Gandy superiority.

Look for the green edge, the Gandy name and the Gandy trade mark.

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GANDY
STITCHED COTTON DUCK
BELT

Among Our Advertisers

Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

"CAN YOU STAND A CRISIS?"

A short item appears in the May issue of the "American Clay Magazine" under the above heading, which readers of Brick and Clay Record will probably be interested in.

"We are in receipt of a letter from Merry Brothers, Augusta, Ga., which reads as follows:

" 'We assure you, you cannot think any more of the Haigh kiln than we do, as it has been a life saver to us when other yards were unable to stand the crisis.'

"This kiln was built in 1912 and has never yet had the fires out. Some record. Some kiln. Why not investigate? Our Mr. Haigh would be pleased to give you all information."

As a matter of fact, Merry Brothers are so well pleased with the Haigh kiln that they are using a special 4-page circular for their letterhead, the two inside pages reproducing attractive views of their plant and the kilns. One illustration shows a general view of the plant, another one taking brick from the dryer to kiln to be burned, side firing on Haigh continuous kiln, and loading burned brick on cars. The first page of the folder bears the regular letterhead of the company.

* * *

EXCAVATOR DISPLACES SIX MEN

One of the latest installations of the one man-excavator manufactured by the Bay City (Mich.) Dredge Works is at the Ford Brick & Tile Co. plant in Harrisburg, Ill. This concern manufactures 30,000 to 35,000 brick per day, or its equivalent in drain tile or hollow building block. The clay is obtained from a 20-foot bank, the upper 8 feet of which is a soft clay and the lower portion a shale which increases in hardness according to its depth.

The Bay City excavator heretofore has not been used much in shale digging, but its huge success at this plant offers it a wider field than clay plant men have heretofore conceded for it. Before the installation of the excavator at the Ford Brick & Tile plant, ten men were employed in the pit to do the various phases of work required. With the installation of the excavator the number of men required in the pit was reduced from ten to four—a considerable saving in labor.

The excavator has a capacity over the requirement of the plant, and hence is only operated part of the time. To dig the raw material for the 35,000 brick daily, but seven to eight gallons of gasoline are required and a small quantity of oil. From this it will be seen that its fuel consumption is exceedingly low, and the installation a very profitable one for the Ford Brick & Tile Co.

* * *

A new branch office has been opened by the Bristol Co. in Philadelphia, room 1311 Wisener Building, with C. C. Eagle, Jr., salesman and service engineer, in charge. Mr. Eagle has had broad experience, including both laboratory training and factory, and sales experience in the field. He was formerly in charge of their Detroit office.

The main office of the Bristol Co. is at Waterbury, Conn., where they manufacture various types of Bristol recording instruments.

* * *

Clay products manufacturers interested in temperature indication and control will find the booklet issued by the Frink Pyrometer Co., Lancaster, Ohio, of value to them.

It gives considerable information regarding the principles of operation, the construction of the instrument, including points of advantage of the Frink System, and illustrates and describes the indicating and recording instruments. One chapter is devoted to the use of the pyrometer in gas making, while another chapter deals with the use of the pyrometer in ceramics. Space is also devoted to recording draft gauges. A copy of the book will be sent on request.

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BRICK and CLAY RECORD
Established 1892. Now in its thirtieth year.

Copyright 1922
By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago
Branch Offices
New York Cleveland Kansas City
Address all communications to home office

Chicago, June 13, 1922
Vol. 60 No. 12

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The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself: 1. To consider, first, the interests of the subscriber. 2. To subscribe to and work for truth and honesty in all departments. 3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive. 4. To refuse to publish "puffs," free reading notices or paid "write-ups;" to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?" 5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity. 6. To solicit subscriptions and advertising solely upon the merits of the publication. 7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements subject to proper and authentic verification. 8. To co-operate with all organizations and individuals engaged in creative advertising work. 9. To avoid unfair competition. 10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The EDITOR'S CORNER

Act Now—Tomorrow May be Too Late

CONSTRUCTION, more than any other single factor, has been the greatest agent in bringing about a business revival in this country. The gigantic activities in the building field have produced hundreds of thousands of houses and flats, each one of which, before they became homes, had to be equipped with dinnerware, furniture, rugs, stoves, kitchen utensils, and a multitude of other things. It is readily apparent that a blow at construction would affect other industries, and be likely to pitch this country into the throes of another business stagnation.

What products are chiefly used in construction? An examination of a representative bill of materials for an industrial building shows the distribution of costs as follows: Lumber, 33.3 per cent.; steel, 25.2 per cent.; clay products, 18.6 per cent.; cement, 7.2 per cent.; sand, 6.1 per cent.; crushed stone, 4.3 per cent., and lime, two per cent. Of these, clay products, steel, cement and lime require a considerable quantity of fuel for fabrication.

Will Soon Exhaust Supply

The present total production of coal is not sufficient even to enable the industries that supply the above basic materials for construction to maintain production at the rate required by the building industry.

It has been stated that coal consumption is going on at the rate of 8,500,000 tons a week, whereas production does not exceed 5,000,000 tons weekly. The country's reserve cannot last long when it is being eaten into at the rate of 3,500,000 tons weekly. As a matter of fact, the reserve supply of coal on April 1 was in the neighborhood of 60,000,000 tons. This quantity reduced at the rate of 3,500,000 tons per week would be consumed in four months. This means that at the present rate of consumption and production of coal, the first of August will see the nation facing an absolute famine of coal.

Some clay plants are now facing a shut-down because of an insufficient supply of fuel on hand, despite the fact that there are orders on their books that would keep them manufacturing at full capacity for at least 60 days.

Steel costs are rising, because of the coal situation; cement prices are breaking away from their base; lime manufacturers are facing an acute situation because of their coal needs and prices are mounting.

Stagnation Follows Inflation

Greatly inflated prices of building materials will simply invite another period of construction inactivity similar to those we have had in the past. A coal shortage would be quick to cause price inflation. Therefore, the coal situation bears an important relation to the public welfare as well as to the industries supplying materials required in construction.

More than any previous coal crisis, however, the coming shortage requires the careful deliberations and thought of the clay manufacturer. He is among those to be most vitally affected, and he carries the responsibility of the nation's business condition. At this writing, the clay manufacturer is one of the largest users, if not the largest consumer, of coal.

A coal shortage usually brings with it its restrictions and regulations that are too well known from past experience to deserve detailed mention here. This thought may be dismissed with the mere recollection of the disagreeableness of priorities and other rulings.

Prepare to Act

There is this to be given serious consideration, however. The industry should be thinking about what it might do in case of a crisis. It should be prepared to show why it should be given classification as an important essential in case of priorities. Since construction is the foundation upon which the present good business conditions are supported, and since without clay products construction work would be curbed, it is important that the clay industry rank high in order of essential industries in the event of coal priorities. The Government does not fully appreciate this angle of the situation, hence the responsibility lies with the clay industry to inform the Government of these facts.

The industry should even take a step ahead and unite to find means to bring an end to the coal strike by furnishing the Department of Commerce facts that will point out the great danger ahead if peace in the coal industry is not soon restored.

Ship Your Products Before July 1

THERE is fear of serious complications in the freight rate situation as a result of the lower rates which become effective July 1, the continued strike of coal miners, and the possibility of increased railroad business in July and August due to grain shipments and coal deliveries to the Northwest and New England during the navigation season.

It is quite natural to believe that the result of the lower rate announcement is the slowing up of freight shipments by delaying, until after the lower rates become effective, all shipments which can be withheld until that time. Immediately following July 1 there is expected a rush for cars with the possibility of a congestion and priority orders.

The above factors are exclusive of the strike possibility at the present writing because of the railway wage reductions, which looms up as a big cloud threatening to let loose a storm on business.

But even disregarding the railroad strike, the aforementioned factors are items which warrant consideration at this time. April was a record month as to volume of building contracts let. May even exceeded April figures. The first half of June finds the pace uninterrupted. The flow of building materials probably follows like a shadow the letting of the contracts by 15 to 45 days. If this is true, then there is a certainty of a great volume of business for material manufacturers and dealers for a considerable period to come.

It is apparent then, that the dealer would do well to anticipate the situation and be stocked against a probable shortage. Unlike previous similar situations, the dealer stands no possibility of losses because of the greater stability of present prices, at least for some time to come. Moreover, materials are being consumed very rapidly at this time, and the contracts already awarded will require considerable quantities.

A lower freight rate will undoubtedly be offset by the higher price of materials, caused by increased coal prices and the shortage of building materials. Manufacturers should urge their dealers to anticipate their demands for several weeks ahead, and order their shipments of clay products before July 1.

Machine Firing Lowers Fuel and Labor Cost

Clay Plant Superintendent Invents a Kiln Stoker and Grate Which Is a Revelation to the Industry—Applies to All Coal Fired Kilns

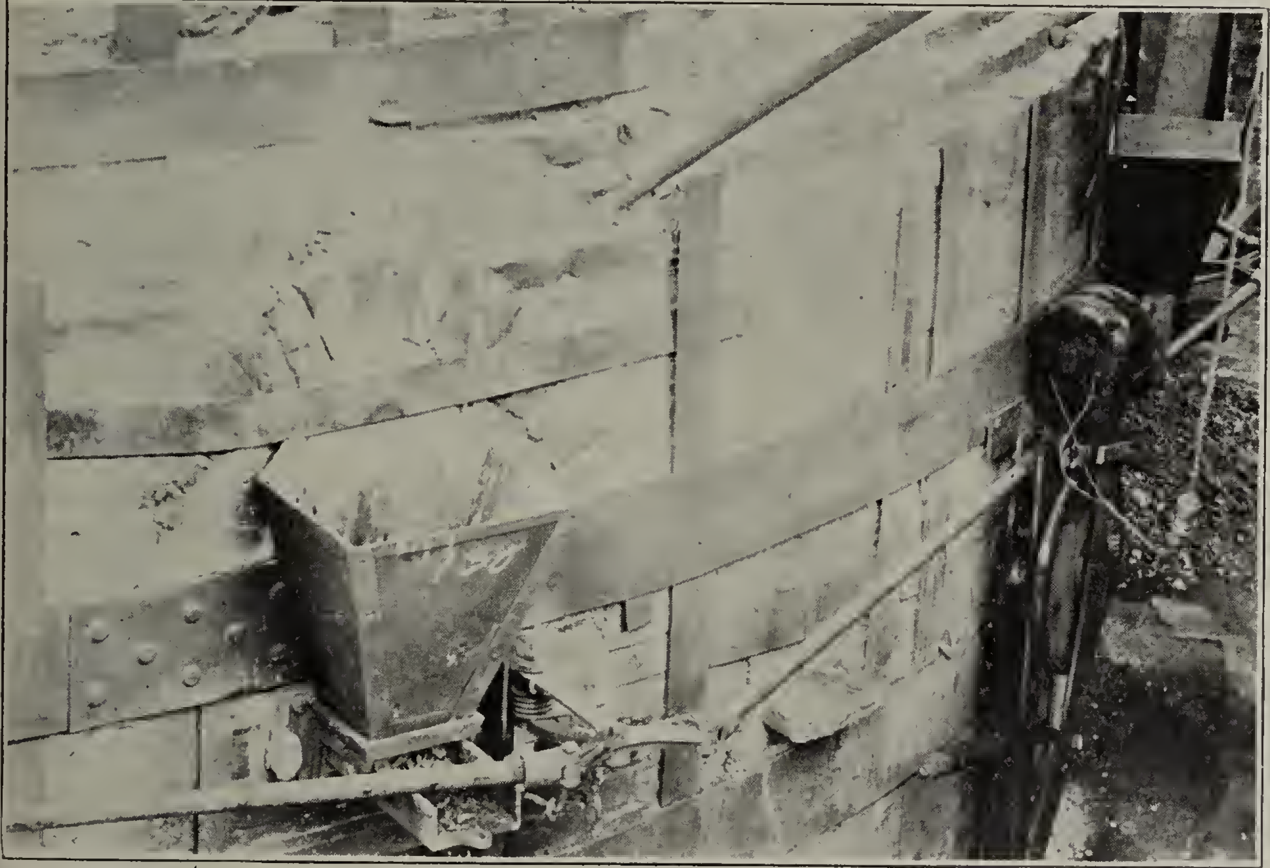
A MACHINE that will mechanically and constantly feed coal into fire boxes of either round or rectangular kilns at any rate desired and at any quantity for each furnace is now available to the pottery or heavy clay products manufacturer. Moreover, the accompanying grate equipment which is furnished with this stoking device takes away the drudgery of kiln firing, simplifies the burning, increases plant efficiency, and eliminates much of the laborious and disagreeable features of kiln operation. This announcement is one of the most innovational in character ever made by Brick and Clay Record.

Claims for Gates Stoker and Grate

Fires automatically.
Reduces the human factor in burning.
Simplifies the fireman's work.
Feeds fuel constantly and uniformly.
Works as well at high or low heats.
Reduces clinker; burns coal completely.
Heavy belching of smoke eliminated.
Permits use of cheaper grades of coal.
Burns kiln in faster time.
Saves coal.
Is flexible and simple.
Not costly to operate.

Watching a kiln equipped with this apparatus from a vantage point, it is striking to see the arms of the device operate from a central point and feed coal into the fire boxes of a round kiln simultaneously and in uniform quantities,—a pound or so at a time. The simplicity in design and operation of this entire equipment arouses amazement, and one wonders why such apparatus had not been devised long ago. Running as it does—smoothly and with almost human movement—it soothes the observer. It is really more than human, because it possesses that accuracy, uniformity, strength, regularity and reliability that are the attributes of machinery.

Standing at the kiln and watching the burning operation, the spectator cannot help but be greatly enthused. At high temperature the fire boxes seem to be operated with no effort, and the kiln is divested of that heavy belching forth of smoke which usually follows in the wake of kiln firing. The apparatus is really a big step forward to the higher development of the manufacturing operations in the clay plant.



The Lower Left-Hand Corner Shows a Coal Hopper Located at a Fire Box, and Shows the Slide or Scoop Which Feeds the Coal Into the Fire Box. The Material Seen on the Floor Around the Kiln in This and the Other View is Illinois Slack Coal Used for Firing the Kiln.

On the plant observed it has reduced the fuel required per kiln from 18 tons of Indiana block coal to about 13 tons of Illinois slack per burn. This difference does not show the real magnitude of the saving, since the Illinois slack coal is a much inferior coal to Indiana block, and the difference in the cost of these two fuels is somewhere in the neighborhood of $1.90 for Illinois slack to $4 for Indiana block, f. o. b. mines. The number of culls have been reduced 50 per cent. and the burning time cut down 12 per cent.

The perfection of this epoch-making equipment, which has been several years in designing, and for which patent is pending, is the crowning victory to the industrious and indefatigable efforts of its ingenious inventor, Major E. Gates.

Major E. Gates is the son of a very well known and esteemed gentleman in the industry—the dean of clayworkers, William D. Gates, president of the American Terra Cotta & Ceramic Co., Chicago. Major Gates has spent most of his time on the Terra Cotta, Ill. plant of the American Terra Cotta & Ceramic Co., as superintendent in charge of production. While there he devoted a great deal of time to the improvement of methods of manufacturing. Mr. Gates has contributed several inventions used in the terra cotta business and applicable to the entire clay industry, such as the humidity dryer and the pulsichrometer. The use of the humidity dryer has resulted in a great saving in time of drying, with accompanying elimination of cracking. The pulsichrometer permits unusual and unique embellishment of ware by spraying that is impossible from any other method of application.

What interests us most, however, in this article, is the mechanical stoker, grate and shaker, equipment which is adaptable to practically every plant on the continent.

Works on Low or High Fire

The speed of firing can be regulated to whatever volume of fuel the kiln requires. It works as well for water-smoking as for high heat, moreover, because of uniform firing clinkering is kept at a minimum and ashes are free from carbon. The coal is more completely consumed than by other methods of firing.

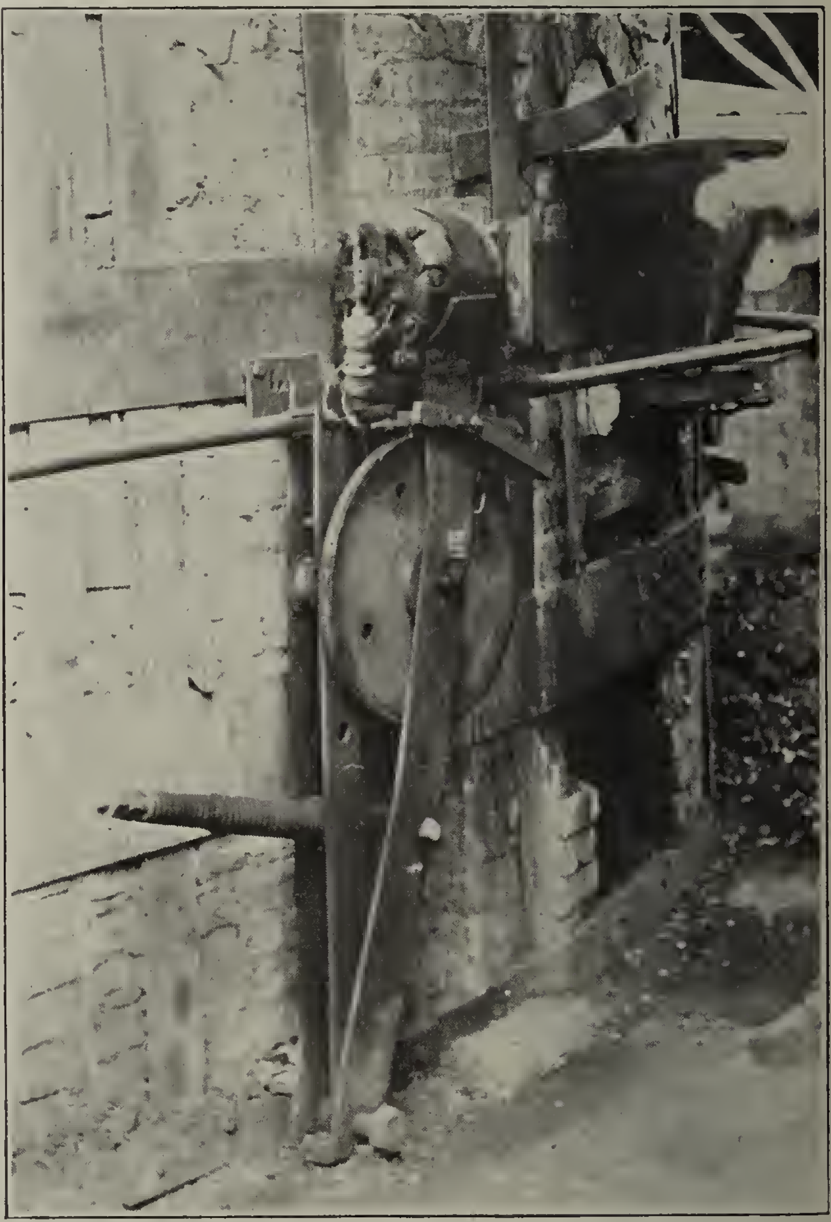
More technically, the apparatus consists of a small quarter-horsepower electric motor operating a friction clutch, which rotates a heart-shaped cam (in back of flywheel shown in photograph) on the edges of which rides a cam-follower. The follower is supported between two upright straps connected to the driving rod at their upper ends and hinged at their lower ends. The driving rods extend all the way around the kiln, and a slide at each fire box is connected to the driving rods by a series of simple levers, so that when the driving rods move every slide does likewise. This motion replenishes the fuel supply since the slide is fed with fuel by means of a hopper located directly above it.

The cam rotates slowly with the cam-follower riding on its edge, pressed against it by the force of a compression spring, which is constantly fighting for release. When the depression in the cam is presented to the follower, it acts as tho one of the supports of the vertical straps were suddenly removed—permitting the force in the compression spring to act on the vertical straps, throwing them to the right. They in turn carry the driving rods to the right, and each slide dumps its little cargo of fuel on the fire below it.

In this manner the operation continues for each revolution of the cam from the beginning to the end of the burn. By turning a setscrew any desired frequency of stoking may be obtained, one, two, three, four minutes or any fraction thereof. The hoppers hold about 50 pounds of fuel. All that is necessary is to fill them as required. The slides or scoops hold small quantities of fuel, but this, as well as other features of the equipment, is very flexible and the size may be changed to suit the conditions.

MAJOR E. GATES

The grate and shaker are unique designs in themselves, yet they are simple and efficient. The grate is straight, but slants about nine inches in 42, and extends clear to the bag wall of the fire box. At the rear end it rests on a crossbar. In the front it is held in position by a series of levers. The grate itself is in two sections—a coking plate and the grate proper, hinged together. By a simple movement of levers the grate is dumped downward and outward opening a space of about eight inches between the rear end of grate and bag wall, over which the ashes and clinkers may be pushed to the bottom of the box and then withdrawn. The grate is then restored to its normal position again by a simple movement of the levers—the entire operation of dumping, cleaning and resetting requiring but a few minutes.



The Driving Mechanism for the Stokers is Shown in the Center. This One Unit Operates All the Stokers on the Kiln.

The beauty of the whole proposition is its flexibility and simplicity in equipment and operation. Any man can operate it. It is not composed of many complicated parts to get out of order. There is everything in favor of this equipment to warrant its due consideration by every branch in both the pottery and heavy clay ware departments of the clay industry.

* * *

CLEVELAND MEN PLAN SUMMER OUTING

Invitation to all manufacturers of brick, tile and building materials who serve the Cleveland and Ohio territory, have been issued by the entertainment committee of the Ohio Builders Supply Association, to attend the midsummer outing and meeting of the Ohio state organization. The outing will last two days and three nights, and comprise a series of boat trips on the Great Lakes. The trip will start from Cleveland on the evening of July 26, and end at Cleveland on the morning of July 29. The trip will take in the Niagara Falls, Buffalo, Detroit, St. Clair Flats, Port Huron and points of interest along the way. As this will be a genuine get-together affair, women will be the guests of the outing. One of the features of the affair is the low cost, $35 covering all expenses, including handling of baggage and meals. It is expected 250 persons will attend. Application for reservations will be thru Charles Broadwell, secretary of the state association, at 202 Gerke Building, Cincinnati, of Chester M. Harris, chairman of the entertainment committee, 560 East 99th Street, Cleveland.

* * *

BUILDING WAGES DECLINE 16%

Building trades wages have been reduced on the average of 16 per cent. since January 1, the National Industrial Conference Board reports. 28 decreases were noted, 18 occurring in the last two months and confined largely to the East and Middle West.

* * *

JURY DISAGREES IN CEMENT CASE

After deliberating for more than 34 hours, the members of the jury impaneled in the criminal case against cement manufacturers of the eastern district, charged with violation of the Sherman anti-trust law, were unable to reach a verdict. Reports state that the jury voted seven for acquittal and five for conviction. As soon as a presiding judge can be assigned the case will be retried.

The defense was able to prove to the satisfaction of the court that if the formation of the Cement Manufacturers' Protective Association would constitute an undue trade restraint, the specific contract was entered into in 1916, whereas the indictment was returned in 1921. The defendants were, therefore, held not liable, since the statute of limitations outlawed the contract. The court, however, ordered the case to proceed under the terms of the first indictment, which charged that by their participation in the Protective Association's activities the defendants had engaged in undue trade restraint.

The trial has been in progress since April 6, and has cost the Government and the cement men in the neighborhood of $500,000.

* * *

GIVES EXTENSIVE SERVICE TO CONSUMER

The Portland Cement Association has recently started advertising a branch of service to the user of cement which will no doubt aid greatly in increasing the popularity of this material. In its advertising the association offers that "whatever use of concrete you are planning, the Portland Cement Association can and will gladly give you absolutely dependable information about it. We will tell you exactly how to use concrete to get the best results." This service is to be commended and it may be that herein lies a suggestion of value to the clay products industry.

* * *

TILE MAKES DRY FLOOR FOR PIGS

The agricultural engineering division of the University of Minnesota has been receiving a great many inquiries recently concerning the construction of hog houses, especially as to the material to use for floors. In sending out information to those interested the following points are brought out: Concrete makes a sanitary floor, but it is often cold and damp and not dependable or desirable for small pigs. A removable floor of wood for the nest to be used at farrowing time is a great improvement. Hollow building tile laid on well drained gravel with about one inch of sand and with the joints between the tile filled with sand makes a warm and dry floor.

* * *

Hudson River Brick Production Will Approach Billion Mark

RECENT DEVELOPMENTS in the building construction business are lifting the haze of perplexity that has hung like a pall over the industry ever since the war, says the Dow Service daily building report of June 3, 1922.

Remaining construction hindrances are of temporary character, for the most part. The question of labor supply is still the most persistently vexing, but there are reasons for believing that even in this issue it will be possible to reach a plane where a working arrangement may be made before very long. The situation is in much stronger hands than appears to the man in the street and the solution ultimately will be brought about by normal business processes rather than by other agencies.

The present open price and delivery conditions are due to the uncertainty of manufacturers regarding fuel supply, temperament of labor at mill centers and effect of freight rate cuts upon manufacturing costs and schedules in the transportation of raw materials. There does not now seem to be any way of ascertaining just how much benefit this freight rate cut will be to the ultimate consumer. Indeed it is likely that much of it will be absorbed by higher labor costs.

The fact is, however, that building material manufacturers have production schedules for this year running closer to capacity than has seldom been known. The best production the Hudson river brick industry ever touched for a single year was 1,200,000,000 brick. This year the production will approximate a billion. The production of Portland cement in the country for the first quarter of 1921 was 15,240,000 barrels, a record. The production in the same three months of 1922 was 15,254,000 barrels. The production for April, May and June, 1921 was 27,228,000 and it is estimated that the production for the same three months in 1922 will be higher than that figure.

The production of lumber as reported by all lumber associations as of May 26 showed production had crept up to 95,000,000 feet a week, or only 5,000,000 below normal with orders running up to 120,000,000 feet a week and shipments up to 105,000,000 feet weekly.

The building business when viewed from its broadest aspects is much more radiant than it appears to be from close quarters. It is from these wider points of vantage that building investors now coming forward base their judgment.

Additional building material price advances are recorded this week, following the price changes upward of the last few weeks. Notable changes this week are in hollow tile fireproofing material, structural metals and in certain lumbers, altho in the latter items the advances are notable in the wholesale markets. Linseed oil reacted downward.

Business Briefs and Trend

TEN PER CENT. FREIGHT CUT TO BE EFFECTIVE OCTOBER 1

Plans for halting the order of the Interstate Commerce Commission relative to new freight rates to become effective July 12, in accordance with decision on Docket 10733, were discussed and agreed upon at a joint meeting of brick shippers held in Pittsburgh June 2.

Railroad factors explained that it will be unfeasible for them to adopt the new rates fixed by the commission within the time specified, and to this end sought an extension of time. Shippers agreed with the railroad interests to apply to the commission jointly for an extension of time until October 1, which would mean that nominally until that time the present rates remain effective.

On the other hand carriers indicate they will reduce the brick rates by 10 per cent., in conformity with the recent horizontal reduction and that present rates less 10 per cent. will be effective on and after July 1, unless the commission orders otherwise. This applies to Illinois, Central Freight Association and Trunk Line Territories.

The conference was evolved from the more or less lengthy discussion that has come out of the ruling known as Docket 10733, which document does not, however, mention western or southern rates. Thus it may be assumed that the general order will establish the southern and western rates on a basis that will not be affected by any other rate action in other sections on October 1. It may be well, therefore, for manufacturers to keep in close touch with respective shippers meanwhile.

Attending the Pittsburgh conference were: J. G. Barbour, Metropolitan Paving Brick Co.; P. G. Hodges, Clay Craft Mining & Brick Co.; E. C. Hervey, Hydraulic-Press Brick Co.; Frank R. Hale, Vigo-American Clay Co.; W. P. West, Franklin Brick & Tile Co.; F. W. Butterworth, Western Brick Co.; W. R. McKown, Brooklyn Brick Co.; J. Brunnon, Barr Clay Co.; R. B. Coapstick, representing Indiana manufacturers; G. K. Mitchell, Hocking Valley Brick Co.; W. R. Allison, Illinois Brick Co., Chicago; William Council, National Fire Proofing Co.; F. W. Lucke, F. W. Lucke Co., Chicago, Ill.; H. C. Kleymeyer, Standard Brick Manufacturing Co.; G. B. Luckett, Crawfordsville Shale Brick Co.; Spencer M. Duty and W. R. Barnhardt, Medal Paving Brick Co.; M. B. Greenough, secretary, National Paving Brick Manufacturers' Association.

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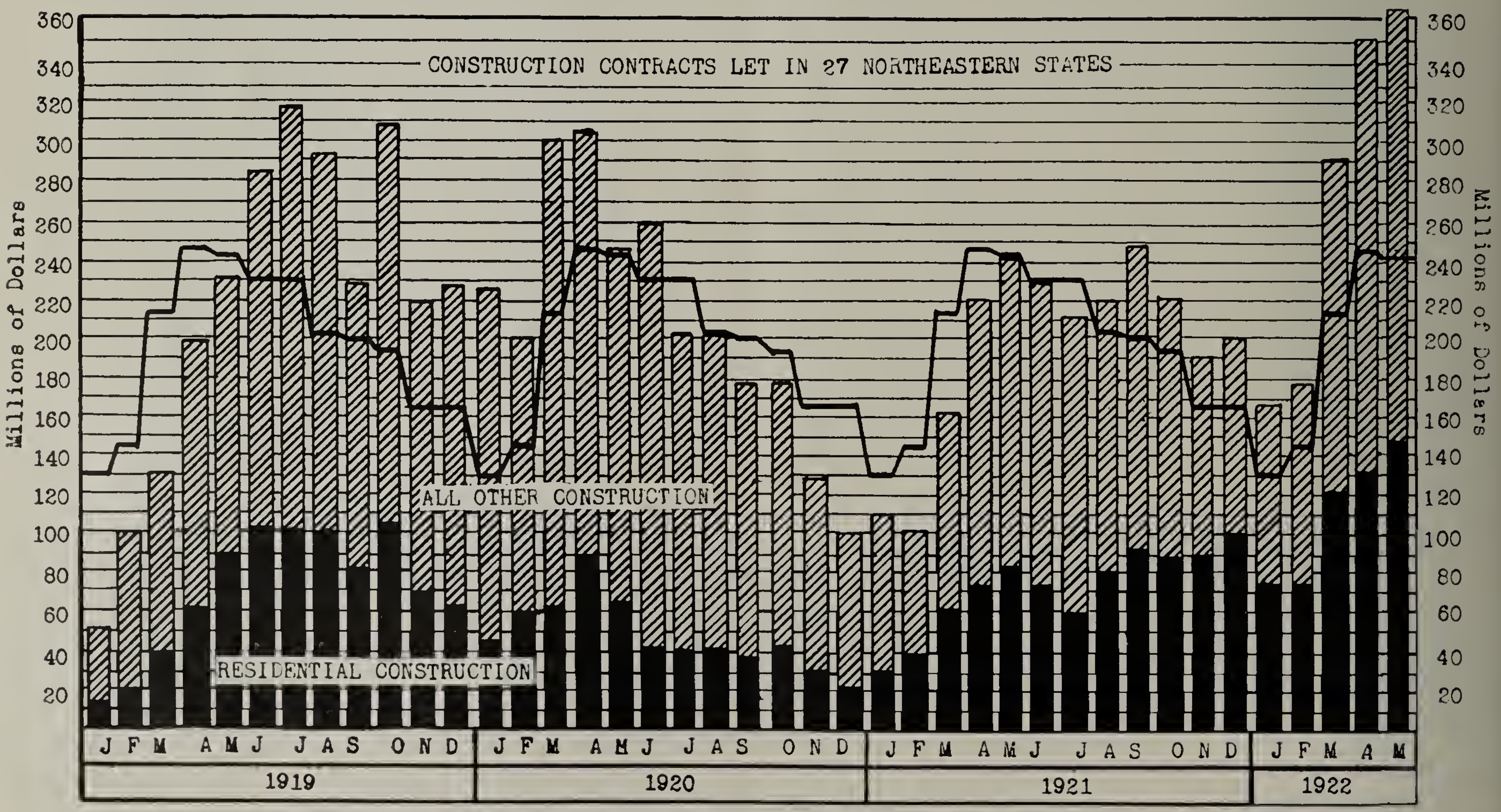
CANADIAN MAY RECORD LARGEST IN YEARS

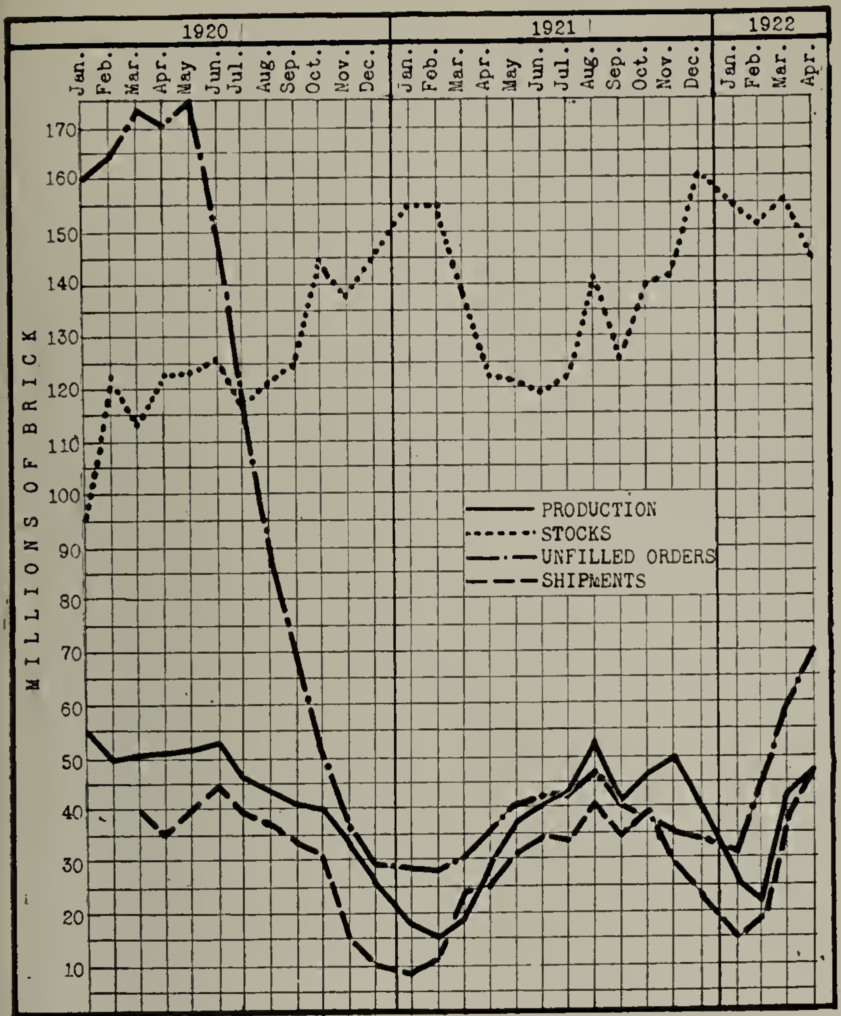
During May, 1922, construction contracts awarded in Canada amounted to $34,827,300, compared with $29,428,400 in April and $26,895,500 in May, 1921. This is the second largest monthly figure on record since May, 1914. Residential building accounted for 45 per cent. of the May total, and amounted to $15,633,500. Business building amounted to $11,516,000 or 33.1 per cent. of the total; industrial buildings, $801,500, or 2.4 per cent.; public works and utilities, $6,876,300, or 19.5 per cent. The value of contemplated new work reported during May was $28,871,500.

The trend of building costs is still slightly downward. During April the wholesale price index of 48 building materials declined four-fifths of one per cent., and is now 78.3 per cent. above 1913 compared with a peak of 183.8 per cent. reached in May, 1920. Prices have now declined in Canada, 59.3 per cent. from the high point.

It is interesting to note the number of people in representative Canadian cities who own their homes. The percentage is as follows: London, Ont., 80; Hamilton, 60; Calgary, 60; Toronto, 55; Halifax, 51; Vancouver, 46; Ed-



Continuous Irregular Black Line Is Ten Year Average for Each Month



Production, Stocks, Unfilled Orders and Shipments of Face Brick in 1920, 1921 and 1922. According to Figures Contributed by the American Face Brick Association to the Department of Commerce.

monton, 45; Winnipeg, 44; Ottawa, 40; Montreal, 5. This makes an average total of 35 per cent. home owners. Were it not for the low percentage of Montreal the Dominion average would be between 40 and 50 per cent.

* * *

BRICK PRODUCTION DOUBLES IN MAY

Reports from 99 manufacturers of common brick in the Digest of the Common Brick Manufacturers' Association for May, show that at present there are more orders on the books than a month ago. Nearly double the amount of brick was produced in May as compared with the previous month, and a largely increased amount of shipping from the plants was reported. Very few price changes have been reported, and a general building up of the production and of the market is noticeable.

As indicated by many of the reports, a phenomenal demand for brick is being experienced in various parts of the country, in a large measure due to the advertising campaigns being conducted by the American Face Brick Association and the Common Brick Manufacturers' Association. Building permits show that there is a decrease in the number of homes of other construction and a marked increase in the number of brick homes started.

* * *

FACTORIES OPERATING 95% OF NORMAL

The Harvard Economic Service has recently endeavored to establish a normal rate for manufacturers and to compare production with it from 1919 to date. The results of this work indicate that at no time during the business depression, the lowest point being July, 1921, was the volume of manufactures in the United States lower than 70 per cent. of normal. During that month the sharp up turn took place, and demands since that time have been fairly steady. The manufacturing output of the country at present is probably very close to 95 per cent. of normal. There have been other studies made along different lines which show approximately the same results, and indicate a somewhat lower current rate of operations.

This contention of the Harvard Economic Service is borne out by the fact that consumption has on the whole been very well maintained. This in spite of the fact that there has been much unemployment in the United States. The amount of actual suffering caused by men being out of work, however, has been relatively unimportant compared with preceding depressions of apparently much less severity.

* * *

LABOR UNIONS HELD SUABLE

One of the most important decisions made in recent years regarding the activities of labor unions was recently handed down by the United States Supreme Court in its verdict in the celebrated Coronado Coal Case. The Supreme Court has decided that labor organizations, altho unincorporated, are amenable to the Sherman anti-trust act. This means that labor unions may be prosecuted for restraint of interstate commerce. Another important angle of the decision is the fact that the Supreme Court contends that labor unions are suable. This means that labor unions are responsible as a body for property damage, bodily injury and similar felonies committed by its members under directions of the unions. The court's comments in regard to this were as follows:

"It would be unfortunate if an organization with as great power as this international union (United Mine Workers of America) has in the raising of large funds and in directing the conduct of 400,000 members, in carrying on in a wide territory industrial controversies and strikes out of which so much unlawful injury to private rights is possible, could assemble its assets to be used therein free from liability for injury by torts committed in course of such strikes. To remand persons injured to a suit against each of the 400,000 members, to recover damages and to levy on his share of the strike fund would be to leave them remediless."

* * *

SET MAXIMUM COAL PRICES

As the result of a conference between Secretary Hoover and the coal operators, a miximum price has been set on various grades of coal to prevent the occurence of a runaway market. In the districts of Virginia, West Virginia, Tennessee and East Kentucky, the maximum price of $3.50 per ton for run-of-mine spot coal has been set. The Alabama field has accepted a lower scale. The result of deliberations regarding the Pennsylvania fields has not as yet been announced, and problems west of the Mississippi River have not yet been dealt with. The Western Kentucky operators insist on a maximum of $4.25.

* * *

CONSIDER ESTABLISHING OPEN SHOP

A meeting of about 35 representatives from all classes of clay products plants in Ohio was held at the Deshler Hotel, Columbus, recently to discuss the question of operating on an open shop basis. H. A. Jung, Chicago, Ill., commissioner of the National Clay Products Industries Association, was secretary. It was stated that approximately 50 per cent. of the production of clay products, including pottery, face and common brick, hollow tile and fireproofing, was represented at the meeting. A resolution containing the following was adopted. "We deplore the strikes caused in Ohio by paid agitators and pledge ourselves to continue to operate our properties as heretofore under open shop conditions." Most of the representatives were from the pottery fields of East Liverpool and Crooksville and from the other fields of that section of the state.

BUSINESS TO ARBITRATE DIFFICULTIES

A recent activity of the Chamber of Commerce of the United States has been the advancement of a plan to use arbitration as a means of settling commercial disputes between business men. It is contemplated to make the present wide use of arbitration in this country more general by extending it among business organizations which are members of the national chamber. The plan calls for the settlement of local controversies by local commercial boards; a settlement of disputes within an industry by trade associations, and of the handling by the national chamber of cases that do not fall within local or trade jurisdiction. This plan will make for the speedy adjustment of difficulties on a common sense basis, and will eliminate the nuisance of the technicality which so often arises in a court case.

CUBIC FOOT COSTS OF BRICK AND FRAME

The following interesting figures have been received from the F. W. Dodge Co., and give average costs per cubic foot for frame residences.

2-story frame house—7 rooms; cost per cut ft.:

Year 1914	$0.19
Peak 1920	0.44
March 1922	0.325

2-story colonial house—8 rooms; cost per cu. ft.:

Year 1914	0.165
Peak 1920	0.385
March 1922	0.29

2-story shingle house—8 rooms (small); cost per cu. ft.:

Year 1914	0.193
Peak 1920	0.448
March 1922	0.333

An interesting comparison is afforded by the figures recently obtained by the American Face Brick Association on the cost of frame construction and brick construction. The average cubic foot cost for a frame house as shown by these figures is 34.76 cents. For the same house with eight-inch brick walls the cost per cubic foot was 36.85 cents. Figures compiled by the American Face Brick Association are Chicago figures, while F. W. Dodge figures take in the territory in the 27 northeastern states covered by this service.

The Building Situation

ANOTHER RECORD-BREAKING MONTH of construction is reported by F. W. Dodge Co. All previous records were broken in April; May building contracts passed the April total with a margin of three per cent. The May total for the 27 northeastern states was $362,590,000, which was 50 per cent. greater than the figure for the corresponding month of last year.

These two record months have brought the volume of construction started from January 1 to June 1 up to $1,352,965,000, the highest recorded figure for the first five months of any year. The year to date is 61 per cent. ahead of last year.

The revival has now become general. Very large increases were recorded in the Central Western States, which heretofore have lagged behind the East.

Residental building contracts broke all previous records in May, amounting to $140,932,000, or 39 per cent. of the month's total. During the first five months of this year the amount of residential construction started has been double that of the corresponding period of last year.

Other important items in the May total were: $63,817,000, or 18 per cent., for public works and utilities; $57,515,000, or 16 per cent., for business buildings; $32,925,000, or nine per cent., for educational buildings, and $23,893,000, or seven per cent. for industrial plants.

Contemplated new work reported during the month amounted to $519,414,000.

Construction operations continue to increase in the New England districts, and peak conditions are being reached rapidly. Actual contract awards are running over the $10,000,000 mark weekly for the entire section, with interest centered in one and two-family houses, office buildings and apartments. The outlook holds up with encouraging promise, and there is no question but that 1922 will go down as a record year in the industry in this territory, and correspondingly, the attainment of record-breaking sales of brick, hollow tile, and other burned clay building commodities.

Operations in Connecticut reflect the situation in Massachusetts, and every week indicates larger totals. At Hartford, Waterbury and New Haven, 240 building permits were issued during the last week in May, with valuation of $1,110,000, as compared with work aggregating $595,000 in the same period of last year. Industrial operations show trend of considerable improvement, and increased projects of this kind are reported at New Britain, New London, Bristol and the cities previously noted.

Material Scarcity at New York

The big factor of the situation at New York, and one causing considerable concern, is that of the growing scarcity of brick, burned clay building products and other materials. The demand for common brick holds as keen as in weeks past and while greater shipments are reaching the market, all allotments are being sold and distributed as fast as received. Best grades of Hudson River stock hold at $20 a thousand, wholesale, and second-hand material has advanced to $47 per load of 3,000 brick, delivered.

Since the first of the year, building operations have developed a total of $294,000,000 in the Greater City. Of this aggregate, Manhattan Borough stands at $68,200,000; Brooklyn, $53,350,000; Bronz, $60,000,000; and Queens at $57,000,000. Housing projects represent about $216,000,000 of the total noted, providing homes for about 35,830 families, or approximately 179,000 persons. Current construction shows that apartment houses are in progress for more than 30,000 families, the majority of which will be completed by the close of the year. With 10,000 private dwellings completed since the commencement of 1922, it is estimated that a like number will be ready for occupancy during June and July, with 5,000 more following closely thereafter. This is New York's building record for the first half of the year, and likely to be duplicated during the coming months.

Fuel scarcity and diminishing labor supply confront the brick producers in the Hudson River district, so that despite the enormous demand for the commodity, it is not likely that manufacture will reach any high point for some weeks to come. The

(*Continued on page* 945)

New York Brings Brick into Limelight

Hudson River Manufacturers Accused of Forming Combine to Restrict Output—Sensational Statements Have Given Industry Nationwide Publicity

AND NOW the brick manufacturer of the Hudson River district is threatened with having his market flooded with a foreign product at a price cheaper than he can manufacture his brick. Samuel Untermeyer, counsel for the Joint Legislative Committee on Housing of the State of New York, commonly known as the Lockwood Committee, is reported to have said that he would import 200,000,000 brick from Europe and set them on the dock at New York for $11 per thousand, unless manufacturers decided to end the existing shortage and sell sufficient brick at a reasonable price.

For two years the Lockwood Committee, with Untermeyer as the beacon of truth and justice that has dispelled the shadows of building material combines and conspiracies in New York, has been investigating the building situation in New York. Various combines have been discovered, broken up and in some instances heavy fines and prison sentences been imposed. And now the brick manufacturers of the Hudson River district are accused of combining to restrict the output and keep the price of brick at a high level.

Shortage Not Manufacturers' Fault

Mr. Untermeyer blames the brick manufacturer for the shortage of brick in New York. It is safe to say that this accusation incites the brick man to laughter rather than anger because the statement is ridiculous to anyone who has even a slight knowledge of the industry along the Hudson River. Had Untermeyer taken the trouble to inform himself of conditions which the Hudson River manufacturer contends with he would undoubtedly have refrained from making the sensational statements which have given brick such tremendous publicity during the past few weeks.

The conditions in New York at the present time have been actuated by entirely natural causes, as any brick manufacturer knows and can readily understand. In ordinary years it is the custom of manufacturers along the Hudson to make and stock about 200,000,000 brick toward the end of the season in fall, that brick may be shipped in Spring before weather permits manufacturing. The yards along the Hudson are for the most part equipped for only summer manufacturing, which means that there is very little brick manufactured during the late autumn and winter months. Last year demand for brick continued thruout the winter months and the all-year yards manufactured thruout the winter months and brick were shipped into New York as long as the Hudson River remained navigable. This unusual demand practically exhausted stocks with the result that when the spring building season opened there was little brick available.

Brick Not Manufactured in a Day

The building season opens in New York about one month before it is possible to open the seasonal brick plants with open air drying facilities. After the plants have been put in operation it takes practically another month before the brick can be gotten into the market in sufficient quantities to be noticeable. It is seldom that new brick come into the New York market in any great quantities before the middle of May or the beginning of June. Manufacturers at present are putting forth every effort to supply the abnormal demand and at the present rate of production a record amount of brick will be manufactured during the season.

The plain truth of the matter is that the abnormal building activity and resultant unprecedented demand has caught the brick manufacturer unprepared with inadequate stocks to supply the wants of New York City. These facts, however, are too commonplace and prosaic for Untermeyer and do not sound as good to the ears of the public as sensational statements of "combines," "restrictions" and "price fixing."

Moreover, Untermeyer can gain no publicity from such things which are the result of perfectly natural causes and conditions, but much favor can be gained in the public eye by exposing alleged combines which have for their object the mulcting of the people. What politician clever enough to think of it would not seize such an opportunity to further his own interests, no matter what the damage involved to those attacked.

Public Loves Sensationalism

Sensationalism is the dessert to the public's daily meal of news, and newspapers, in their desire to gratify this craving of the people have published these statements, made them the subject of editorials and so have given the brick industry of the entire country publicity of a character entirely unwarranted and undeserved. The New York situation is not unique. Even in Chicago, with a smaller volume of building and a greater brick producing capacity, almost every plant is working to absolute capacity to keep pace with the demand. With building operations assuming greater proportions than for many years it is only natural that the Hudson River district cannot immediately become adjusted to the conditions imposed upon it.

To alleviate the sufferings of thousands of people who, according to Untermeyer, are prevented from building by the high prices and existing shortage of brick, it is stated Untermeyer has proposed to import brick from Europe and deliver them in New York at $11 per thousand. To this end he is reported to have written a long letter to the Senate Finance Committee asking that brick and cement be permitted to enter this country without any tariff impost. This petition was granted and Untermeyer may now flood the New York market with foreign-made brick. Very simple, is it not? Dow's Report of May 20, however, tells us that brick has never been successfully imported at a price which would make its use in building possible. Difficulties of transporting such a commodity as brick are considerable, and are enhanced by the necessity of handling them safely and cheaply. Transportation and handling form one of the largest single items in the price of brick and have so far prevented importation for practical purposes.

Different Size Handicap to Importation

Another difficulty in importation is the size of brick. Thruout the United States brick are of a uniform size and shape and a face brick manufactured in Dixie can successfully be used in connection with a common brick manufactured in New York. This greatly simplifies the work of the architect in designing buildings, and all drawings are designed according to the American size of brick.

European brick are larger than those manufactured here and, tho it would not be impossible to use them, it would multiply the troubles and difficulties and enhance the cost of the building. This added cost would probably more than offset any saving which it is claimed could be made by importing. Would it be practical, for instance, to back up a 2¼x3¾x8 inch face brick with 2½x4½x9 inch common brick? We are inclined to think that Untermeyer's imported brick will scare brick manufacturers about as much as the horrible face on the toy ballon which shrinks into insignificance when the air is let out.

Suppose Untermeyer can buy brick and bring them to New York for $11 per thousand. These brick will cost him only $6 in Europe. The average price of common brick in England today is $15 per thousand, which is $9 per thousand more than the price at which Untermeyer proposes to import brick. Is it reasonable to suppose that any manufacturer would ship brick to America for $6 when there is a nearer market which is offering 150 per cent. more?

If Guilty, Manufacturers Shoud Be Punished

If the brick manufacturers in the Hudson River district have been guilty of collusion or other violations of the anti-trust laws, they should be punished and no one would be more anxious to see such vice stamped out than the brick industry itself. Sensational charges, however, will do nothing but harm to the industry and to the public who believes them. When they are supplied with proof that combines do exist among the Hudson River manufacturers, honest manufacturers will be the first to help stamp out the evil.

Mr. Untermeyer's statements have been given publicity and commented upon editorially in practically every state in the Union. This fact, altho the manufacturers in the New York district are primarily affected, has taken away the local character of the situation and given it national importance.

Importance of Brick Recognized

Altho this means that the entire industry has received much unfavorable publicity, there is another angle to the situation, which is somewhat flattering to the brick manufacturer. Not many years ago brick was regarded as a more or less insignificant commodity, and little attention was given it. The rapid strides forward in the last few years, due to organization, advertising and other reasons, has forced brick on the attention of the press and the public, and its importance as a basic building material has been recognized. The recognition of its importance has led to investigations and has resulted in columns and columns of newspaper space which have been devoted to it recently. If brick were an unimportant commodity it would not be worth the time of the Government to investigate. If there is any truth in the saying "every knock is a boost," brick should become a highly favored building material.

⁂

OIL FIRING EXPERIMENT WATCHED WITH INTEREST

East Liverpool (Ohio) Brick Manufacturing Co. is considering the firing of its face brick kilns with oil, as experiments have been highly satisfactory. The first kiln that was fired with oil at this plant created much concern among manufacturers thruout the eastern states. The equipment of the National Products Co., of East Liverpool was attached to the kiln, and while the kiln was being fired many manufacturers visited the plant for the purpose of observation. When the kiln was drawn, the quality and color of the brick was pronounced by General Manager Harry Horwell as quite superior to the stock previously fired in the same kiln with coal.

There was a saving in the time of firing, a saving in the cost of fuel, and a saving in the content of the kiln. The kiln is now being set for another fire, and fuel oil will be used as before.

Altho kilns of brick have been fired with oil in the western and eastern states, the firing of the kiln at the plant of the East Liverpool Brick Co. is the first to be done successfully in the Columbiana County territory. Some few months ago Mr. Horwell decided to test an improved oil burning system, and then invitations were issued to manufacturers in all the eastern territory. These folks visited East Liverpool when the kiln was being fired, and when the kiln was drawn, notice of result was forwarded all those interested.

It is now likely that all the kiln of the East Liverpool Brick Manufacturing Co. will be equipped with an oil burning system. The second kiln to be fired with oil at this plant will probably be ready for "pulling" on or about June 15.

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PLASTIC CLAYS IN KINGSTON, ONT.

In the northern part of the Kingston district in Ontario there is found a large quantity of stoneless plastic clay, Commerce Reports for May 8 says. It is a dark gray sticky clay, hard to dry, and has a high shrinkage. It is an unsatisfactory material to use for pottery, altho a quantity of flower pots were produced from it in a small plant, but as a rule this clay is a failure as far as pottery is concerned. This clay burns to a red color, but at a few points there is a bed of buff clay below the red. Most of the buff burning underclays are very silty and only feebly plastic, but in the northern part of this district the underclay has very good plasticity and better working qualities than any of the red upper clays.

A sample of the underclay was taken from an old brickyard site. This clay was formerly used in the manufacture of field drain tiles; it is fairly smooth, and appears to be free from coarse grit. It can not be used direct from the bank as a wheel clay because it contains certain layers which do not slake in water, but remains in small lumps; it is therefore necessary to either pulverize the dry clay very finely or else wash and screen it.

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TWO IMPORTANT FACE BRICK BOOKLETS

Two new booklets have just come from the office of the American Face Brick Association which are highly interesting to the industry. They are a booklet on "Orienting the House," and another giving data on comparative small house costs in Chicago. The first mentioned booklet gives helpful suggestions regarding the proper laying out of the house and grounds. It embodies a study of the placing of the house with relation to the sun's rays in all seasons. Very little literature has hitherto been available to the home builder on this subject.

The second booklet gives comparative costs of houses with five different types of wall construction. Five bids were secured from as many different contractors for each type of house, and the results show clearly the slight difference between the cost of brick construction and other types. The most expensive type proved to be the face brick exterior with hollow tile backing, and this was only 6.2 per cent. greater than an all frame wall.

With five bids averaged the possibility of error was eliminated, and the figures can be considered authoritative. Bids for a brick veneer home were 4.7 per cent. higher than the frame home, and for face brick with common brick backing, contractors asked six per cent. more.

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"DEPENDABLE HIGHWAYS" ONE YEAR OLD

"Dependable Highways," the official organ of the National Paving Brick Manufacturers' Association, is celebrating its first aniversary in its present form.

"The publication was conceived for the purpose of distributing accurate, dependable information about vitrified brick paving in town, city and country," says Stanley L. Knisely, economist of the National Paving Brick Manufacturers' Association.

"The monthly mailing list now contains 5,000 names after a single year's existence. On this list are included engineers in public and private practice, public officials and contractors."

The present issue skeletonizes important articles that have appeared during the past year.

Correct Methods Lower Burning Cost

What Happens in the Kiln During the Burning—Gives Outline for Efficient Burning Records—Suggests Method for Studying Burning Process

By J. H. Kruson

A. P. Green Fire Brick Co., Mexico, Mo.

QUANTITY, NOT QUALITY has been the objective of manufacturers in almost all lines of industries in the United States during the past three or four decades. Demand for manufactured articles has in most cases been so great that quality has been a secondary consideration, quantity production being the desired objective. Since production is governed by the market, there arose during this time a standard which fixed prices at a level which was out of keeping with the value of the article produced or its value to the consumer. This standard is naturally fundamentally unsound and in recent years progressive manufacturers as well as a large part of the buying public have realized the truth of this statement. To satisfy this demand for quality ware there have been some instances where clay products have been shipped as far as 1,500 and 2,000 miles by organizations which maintained a reputation of quality for their ware.

One recognized way to improve the quality of our ware is thru research. More attention than has ever before been given to this work is now being centered on research work by individual manufacturers and by entire industries, as in the case of the clay products industry. It is the hope of the industry that thru research work more practical and scientific methods of manufacture will be introduced, which will inevitably result in better ware more cheaply manufactured. In its efforts to furnish to the consumer a product of maximum serviceability and value the clay industry has made considerable progress thru establishing recognized standards of quality and size.

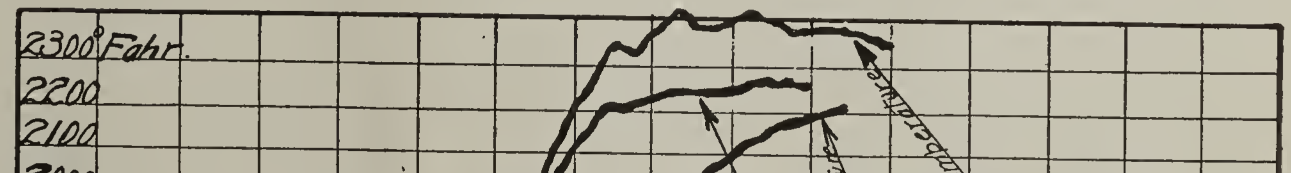


Fig. 1. Comparison Between Shrinkage Periods, Vitrification Range, Time and Temperature for Four Brick of Different Clay or Methods of Manufacture.

Building Materials Must Be Strong

In the manufacture of building materials, strength is one of the prime requisites and in clay products the degree of strength attained depends to a large extent on the degree of vitrification to which the product is burned. The maximum mechanical strength in practically all clays is developed when the ware reaches the stage of complete or dense vitrification. Vitrification renders the ware practically impervious to moisture, the usual absorption capacity being about one to five per cent. by weight. When a vitrified piece of ware is broken, the fractured surface shows a very dense, compact and homogeneous body. In burning to vitrification there is danger that the ware may be burned too hard, beyond the point of maximum mechanical strength and toughness, into a more brittle, glass-like product. Crushing tests are not always sufficient to determine the all-around strength of the ware, since a piece of ware may be burned to a glass-like condition, registering the same crushing strength as other wares, but being many degrees below it in toughness and tensile strength.

In the state of complete or dense vitrification new mineral compounds are sometimes formed which are usually very stable. The non-absorbent qualities of the ware insure its imperviousness to decomposition and the action of the elements have little or no effect on it. One other advantage of the vitrified body is the practical elimination of the efflorescence or whitewash, since all soluble salts are securely sealed in the body. As practically no disintegration occurs, the possibility of the formation of any soluble salts in sufficient quantities to be harmful is eliminated.

Vitrified Ware is Strongest

If a clay product is burned to a state of incipient vitrification when the clay is bonded only by a softening of the finest low fusing ingredients it will be of a fairly high absorbent character, its mechanical strength will be less than that of the vitrified ware and the mineral compounds which are formed in the burning are apt to be unstable and subject to disintegration by atmospheric action, after the ware is in use.

In the burning of refractory products, vitrification is not of such great importance as in building materials, and the hardness to which they are burned depends entirely on the use to which they will be put. Refractories are seldom expected to withstand the conditions imposed on building materials, but such ware is generally burned till the finished piece acquires a good ring.

Paving brick are subjected to probably a harder test in actual use than any other clay products, and therefore the burning of this class of ware to develop its utmost strength is of the highest importance. To burn paving brick clay is required which when burned to vitrification has a degree of strength and toughness sufficient to withstand the standard rattler test. The severity of the conditions imposed on the ware in this test are such as to preclude the possibility of manufacturing paving brick from a great many clays adaptable for building materials. The strength of a clay product is governed to a large degree by the bond formed during the burning. Before the application of the heat to clay products, each piece is formed of a number of minute particles held together in the proper shape by outside agencies, chief of which is moisture. Application of heat in the kiln brings about fusion and decomposition of the minerals in the clay and the combination of their bases with the silica. This results in the formation of new silicates. As the burn advances minerals of higher fusion temperature are gradually fused, the speed of fusion depending on the amount of heat applied, the proportion of fusible ingredients, their fluxing characteristics and the size of the mineral particles which form part of the clay mass.

Changes in Clay During Burning

Destruction of the mineral ingredients by fusion and solution, and the formation of new compounds until the large particles only hold their identity, form a framework which is bonded together by the particles that have gone into solution, worked their way around and between the larger particles until the clay mass has become a dense, solid and stable body. This process is known as the vitrification or bonding period.

It is when the clay enters this stage of the burn that shrinkage begins. Shrinkage continues as long as the various mineral ingredients are broken up and dissolved, attacking the larger particles and more refractory components. When all of the fine fusible portions of the clay have been dissolved and thru their fluxing properties enough of the larger and more slowly fused particles have been broken up, a chemical reaction takes place in the clay mass and thereafter the shrinkage is negligible. This period is sometimes called the fire shrinkage or bonding period. The bonding process and the strength of the clay ware increases during the remainder of the burn, commonly termed the soaking period.

During the "soaking" or vitrification period, the solution of one mineral into another proceeds, the rapidity of these chemical reactions being governed by prevailing temperature and the chemical composition of the clay.

No Set Formulas for Burning All Clays

There are no set formulas or rules which govern the burning of all clays. For different types of clay ware different burning methods are used. Common brick, for instance, are usually burned just long enough to permit the forming of a bond of sufficient strength for the purpose for which they are intended. Appearance also is a secondary consideration in this ware. Burning does not, as a rule, proceed on as exact a scale as in other clay wares, a variation of six or eight cones between the top and bottom of a kiln being not an unusual occurrence. Not all clays can be vitrified, due to their chemical composition. With such a clay maximum color intensity is not obtainable. A range of two or three cones is considered a good time—temperature period for this type of clay, but sufficient time must be allowed to equalize and distribute the heat thruout the kiln to insure its development chemically into a dense product.

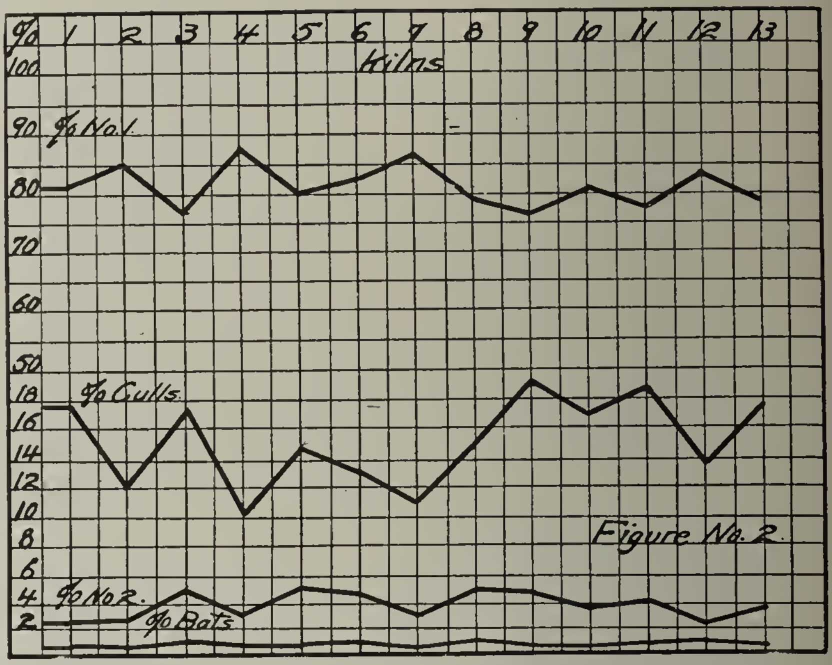


Fig. 2. Chart Showing Amount of Bats, Culls, and No. 1 Ware Taken from Kiln.

A comparison between shrinkage periods, vitrification range, time and temperature for four brick of different clay or methods of manufacture is shown in Fig. 1. Curve A represents a face brick made from a number two fire clay by the dry press process. The absorption is 4.7 per cent. of the total weight of the brick. Curve B is a fire brick made from an average grade of good fire clay by the dry press process, absorption being 8.7 per cent. of the total weight. Curve C is a stiff mud face brick manufactured from a number two fire clay, similar to that used in the dry press face brick of Curve A. Absorption is 2.5 per cent. of the total weight of the brick. Curve D is a shale brick made by the stiff mud process. Absorption is .86 per cent. of the total weight of the brick.

Correct Burning Reduces Cost

These samples represent average conditions for each kiln of ware, and the time-temperature curve presents the fastest burning schedule which could safely be followed.

Correct burning of ware has a direct bearing on the cost, amount and quality of number one ware produced. This operation requires close watch at all times to insure the maximum amount of number one ware from every kiln burned. On some plants burning operations have been neglected and the occasional failure or near failure of a kiln has come to be expected. Guesswork by the fireman cannot be depended upon, since the fireman is just as apt to make a wrong guess, resulting in a poorly burned kiln, as he is to guess correctly. At times periodic failures are the result of actual negligence on the part of the fireman to operate the kiln to the best of his ability. The fireman needs constant checking up, instructions and assistance.

The large majority of firemen proceed with no definite instructions as to the manner in which they are expected to handle the kilns during their shift. Such a haphazard procedure can hardly be expected to result in as uniform a grade and amount of salable ware as the plant where the firemen have definite instructions regarding the proper manipulation of draft, fires, temperature and the progress expected of them during their shift.

Good Burning Apparatus Essential

An invaluable aid to proper burning is good burning apparatus. An instrument seldom used is the draft gage which indicates the stack pull, and permits regulation and control of the draft thruout the burn. The pyrometer is practically indispensable as a guide, showing the progress of the kiln and also enabling exact duplication of results. With the pyrometer it is possible to maintain an accurate check on the exact temperature in the kiln from start to finish of the burn. Cones are also valuable as indicators of the effects of time and temperature upon the ware, altho periodic draw trials systematically taken from the kiln represent the true condition of the ware in the particular part of the kiln from which they were taken. It is true that good results have been obtained without the use of any of the foregoing equipment, but the oftener occurrence of fuel failures and the usually lower percentage of number one ware make the economy of such a procedure questionable. The quality of the ware depends primarily upon the burning procedure. It is therefore essential to have records of this procedure and of the methods used for each burn, and their effect upon the ware together with any further information of value to permit the duplication of results. A suitable time-temperature curve can be neatly arranged on an adaptable sheet of paper. Many clay plants consider records as a more or less necessary nuisance, probably because an honest, accurate record of actual facts would bring criticism and partly because records are frequently made to represent favorable conditions rather than actual conditions, in the hope of escaping just criticism. An honest record is invaluable and indispensable for economical operation in analyzing, duplicating and bettering of conditions. A dishonest record, however, is more harmful than no record.

An Outline of Burning Record

Following is a general outline of the burning record which may prove valuable in compiling a record for use on other clay plants. Naturally for different wares it may be necessary to make a few minor changes in order to secure a record covering in detail every step of importance, to furnish an adequate and immediate understanding of the burning operation.

A. Burn time and fuel consumption.
   1. Hours water-smoked.
   2. Hours burned.
   3. Hours oxidized or reduced.
   4. Hours settle.
   5. Total fuel used.
   6. Quality of fuel.

B. Cones, top and bottom peepholes.
   1. Time cones start down, half down and flat. Top peephole, wicket and center cones.
   2. Time cones start down, half down and flat. Bottom peephole, wicket and center cones.

C. Draw trials and settle.
   1. Top. Time when soft, medium and thoroly matured.
   2. Bottom. Time when soft, medium and thoroly matured.
   3. Total settle in inches.

D. The finishing period.
   1. Description of methods employed in handling the kiln during this period (flashing for colors, salt glazing, and so forth).
   2. Date and hour finished, cooling procedure.

E. Contents of kiln.
   1. Largest ware set.
   2. Condition when set, wet, dry, checked, and so forth.
   3. How set.
   4. Condition of setting.
   5. Height set.

F. Location of defective ware (from observation when emptying kiln).
   1. Underburned ware.
   2. Overburned ware.
   3. Fire checked.
   4. Air checked.
   5. Crooked ware.
   6. Kiln marked ware, and so forth.

G. Causes of loss.
   1. Number two ware.
   2. Culls.
   3. Bats or loss.

H. Percentages of different grades.
   1. Percentage of number one ware.
   2. Percentage of number two, culls, bats or total loss.

I. Condition of kiln.
   1. Floor, rough or smooth.
   2. Condition of flues, bag walls, and so forth.

Analysis Reveals Weak Points

Careful following of this outline in the accumulation of exact data during several burns from each kiln will provide a firm foundation for the thoro analysis of the burning operation. This information, when accompanied with draft records, temperature and shading or drawing report, showing the amount of different shades of face brick, kind of pipe, hand-molded tile, and so forth, will take from the burning operation the air of mystery and uncertainty which surrounds it on many plants, and permit the accomplishing of more uniform results.

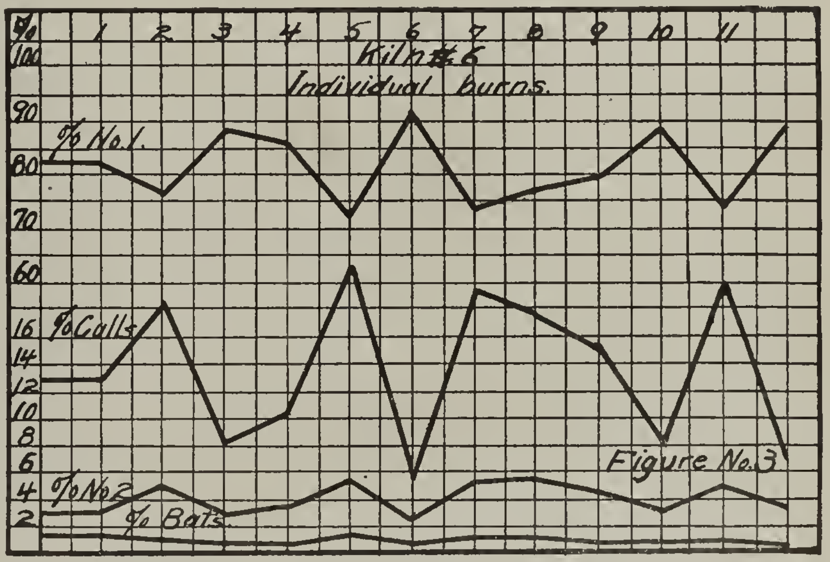


Fig. 3. Quality Record of a Kiln Operating Under Similar Conditions for Six Burns.

Such an analysis invariably brings out the weak points. Records secured from five or six burns from a battery of 20 to 30 kilns will most probably appear somewhat confusing, especially if the results are very irregular, and will at first appear to have very little real value.

The use of graphs in recording the amount of bats, culls and number one ware, and so forth, taken from the kiln, is very desirable. Fig. 2 shows how such a graph can be worked out. In this chart the quality of the ware is shown to be fairly uniform, altho the average is a low percentage. A further analysis of each individual kiln shows a few very good burns, containing over 90 per cent. number one ware, some very poor kilns averaging about 70 per cent. number one ware, and a few burns which represent average conditions. The percentage of number two ware is not excessive. The high percentage of culls, however, represents a loss due mainly to poor burning. The low percentage of bats is a creditable performance.

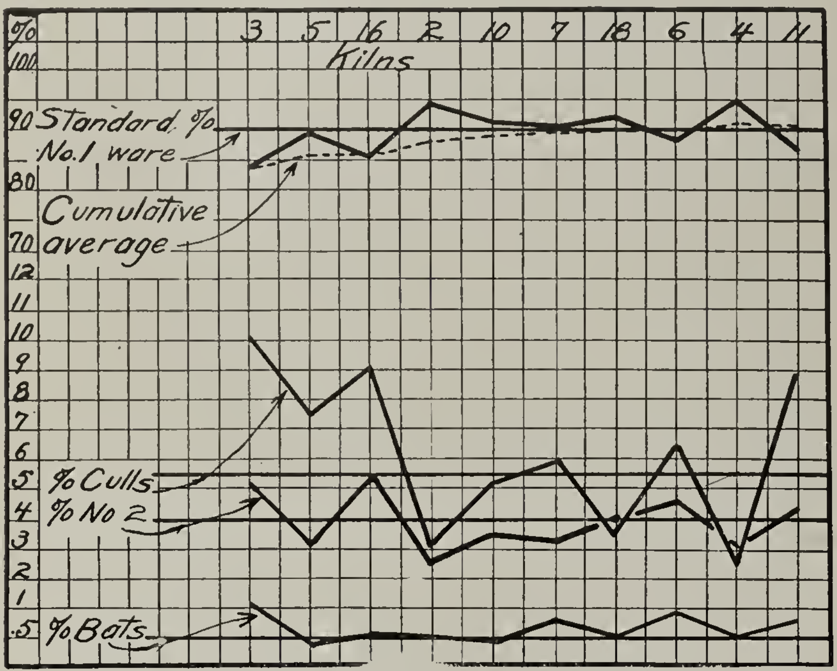


Fig. 4. Chart Showing How Bats, Culls and No. 1 Ware Taken from Kiln Conform with Standard Set. Straight Line Indicates Standard Percentage.

Individual Kilns Often Fluctuate

The percentage of number one ware may be uniformly good or it may be uniformly poor. Individual kilns may fluctuate between high percentages or low percentages of marketable products, or may show an average between the two extremes. Fig. 3 shows quality record of a kiln operating under similar conditions for the six burns shown. Variations in quality in the different burns in this kiln are very great, and were due to the actual methods of burning.

When tests on a kiln show the ware to be continually fluctuating from one extreme of quality to the other, the fault undoubtedly does not lie with the kiln. If, however, a kiln consistently produces a low percentage of good quality ware, or requires an excessively long burning period to turn out a good percentage of high grade ware, it is a safe criterion that the fault lies in the kiln construction or design, rather than in the burning procedure. In case of a greatly varying percentage of quality ware in different burns, the fault is almost invariably with firing methods, condition or grade of clay, setting, condition of the ware when set, or even a careless drawing gang.

Certain Percentage of Loss Inevitable

If accurate records of the kiln have been kept the causes for failure can usually be determined. Any mistake such as too rapid water-smoking, too rapid cooling, underburned bottom, overburned top, spalling, pressure cracks, poor clay, poor setting, lamination, dryer checks, and so forth, will be revealed by the records. The aforementioned causes for failures can almost invariably be corrected; sometimes, however, obstacles arise, which cannot be quickly or easily eliminated, and a considerable amount of resourcefulness and irksome work is required before they are overcome.

Even if the above operations are carried out accurately and utmost precautions taken against carelessness, and so forth, a certain percentage of loss thru handling and manufacture is unavoidable. Speed in manufacturing and handling to bring about low costs and economical operation will also govern amount of time and effort which is advisable to spend to reach the highest percentage of number one ware. A line of separation must, therefore, be established between these allowable losses and the losses which result from carelessness, inaccuracy or inefficiency. Plants which pay their workmen on a piece work basis must contend with the evils resulting from the workmen's desire to increase their pay or shorten the hour's work thru excessive speed and resultant carelessness. This often results in losses thru spoiled or injured ware.

In view of these conditions, it is desirable to establish an allowable breakage percentage. The kind, size and value of the ware will necessarily govern this amount. Assuming brick to be worth $30 per thousand and seconds $25 per thousand, then every time a workman makes a "second," disregarding all other losses, one-half of one cent is wasted. If this workman handles 12,000 number one brick per day and chips five per cent. of these, causing them to be classed as seconds, the loss between the value of the two grades is $3, which is about equal to his wages. This same method of figuring may be applied to other products or to number two ware, culls and bats.

Study Operations Carefully

Sometimes in burning it may prove to be more profitable to accept a certain per cent. of underburned ware on the floor and around the bag walls than to unduly lengthen the burning time. A careful analysis of the various operations should be made to determine the highest point of efficiency to which these operations should be carried, consistent with economical production.

It may be found advisable to establish a reasonable standard for allowable breakage. Following the establishment of such a standard, the setting foreman may be held responsible for the setting of all imperfect ware and to account for all ware rejected as imperfect. The shading or drawing foreman will find that it takes eternal vigilance on his part to keep within his prescribed limits of chipped and broken ware. It will be found that this method distributes much of the blame generally placed on the burner on the aforementioned foremen, and will give the burner an opportunity to show thru his records the cause of inferior grades and percentages of each.

Fig. 4 shows how this can be illustrated graphically for each kiln shade or draw per month. This graph is very effective and is easily understood. The standard in Fig. 4 has been determined for face brick, for other products, however, any standards should be the result of careful experiments and studies.

* * *

A MODERN PLANT 47 YEARS OLD

The accompanying photograph is an aeroplane view of the plant of Gladding, McBean & Co., located at Lincoln, Cal., 120 miles northeast of San Francisco. This plant manufactures a great variety of clay products such as architectural terra cotta, garden furniture, face brick, fire brick and shapes, roofing tile, floor tile, chimney pipe, flue linings, drain tile, partition tile, vitrified sewer pipe, and so forth. It was started in 1875 and consisted at that time of several small buildings with two kilns manufacturing a very limited line of wares.

The growth has been steady from the start and new kilns and buildings have been added from time to time until today the buildings are of hollow tile and reinforced con-

An Airplane View of the Gladding, McBean & Co. Clay Plant at Lincoln, Cal., About 120 Miles Northeast of San Francisco.

crete construction being three stories in height, well lighted and ventilated. There are 36 down-draft kilns giving the plant a capacity of approximately 50,000 burned tons of ware per year of all varieties.

The clay used is mined on the company's property, which consists of about 600 acres with an inexhaustible supply of plastic fire clay of good quality.

One feature of this plant is the method of storing and handling the crude clay. The clay is mined with an electric shovel, loaded into cars and hauled to the clay storage building having a capacity of about 30,000 tons, where it is piled for storage by a traveling crane with clam shell bucket. As the clay is used the crane dumps it into a series of bins from which it is drawn by gravity thru chutes into an electrically propelled compartment car which measures the desired mix by volume. The mixture is then dropped onto a conveyor which feeds it into the dry pans for grinding. Three men, one operating the electric crane, one the electric measuring car and one feeding the dry pans, handle each year all the clay and grog used by the plant.

Crude oil of about 12 to 14 gravity is the only fuel burned in the plant, it being atomized with compressed air to facilitate the burning. All the machinery is electrically driven by individual motors with hydro-electric power purchased from a large hydro-electric power corporation.

The architectural terra cotta which is manufactured is of high quality, having been furnished for buildings as far east as Kansas City, Mo., and in all the principal cities on the Pacific Coast, also in Honolulu, Sydney, Australia; Kobe and Tokyo, Japan.

The "Cordova" roofing tile made in beautiful russet browns, purples and red shades are steadily growing in popularity as indicated by the fact that they have been furnished for roofs on buildings and homes in the following eastern and southern cities: New York, Boston, Washington, D. C., and Memphis, Tenn.

* * *

EXAMINING SEWER PIPE SPECIFICATIONS

According to an announcement just issued by the Bureau of Standards, Washington, D. C., arrangements have been made for a cooperative examination of sewer pipes used in Los Angeles, Cal., the work to be conducted by the bureau, manufacturers who may be interested, trade associations and the city engineer's office of that city.

The object of the work is to discover whether standard specifications, as they exist at the present moment, insure a sufficiently high grade and durable pipe to withstand the rather severe alkaline conditions existing in the southern California territory.

The first conference with this end in view was held April 11 at Los Angeles, at which meeting there were present about 20 manufacturers, representatives of trade associations, including representatives of the city. An investigational program was approved after a lengthy discussion of the subject matter.

Excavations and installations of test sections are now being carried out, and the final report is awaited with interest by the entire trade.

* * *

APPOINT A. C. S. MEETING COMMITTEE

A committee has been appointed by the American Ceramic Society to arrange the annual summer meeting of this organization. Millard F. Gibson, of the Interlocking Tile Corporation, has accepted the chairmanship of the commitee and will have as his assistants N. B. Davis, of O'Brien & Fowler, Ottawa; L. H. Cole, Department of Mines, Iowa; Howells Frechette, Department of Mines, Iowa; G. Percy Cole, Dominion Glass Co., Montreal, and H. F. Dingledine, National Fireproofing Co., Hamilton, Ont. It is hoped to arrange the summer meeting sometime during August, and it is planned to visit Toronto, Hamilton, Montreal and Quebec.

* * *

NO TARIFF FOR COMMON BRICK

Common brick and cement, on which duties were proposed in the Fordney Tariff Bill, were restored to the free list by the Senate recently. The Senate Finance Committee itself proposed the action as the result of criticism against rates which might boost prices of building materials. The new clauses have attached, however, retaliatory provisions against any country which may impose duties on American brick or cement. This clause, it is supposed, is aimed at Canada, which is now imposing a duty on several classes of clay products.

Curtailing Waste by Cost Accounting

Cost Accounting Should Show Causes for Variations in Cost and Make Control of Costs Possible

By L. P. Alford

Editor, Management Engineering

IN AN ADDRESS before the Refractories Accountants' Institute, a part of the activities of the Refractories Manufacturers' Association, at the meeting held in New York on October 24, 1921, L. P. Alford discussed the effect that cost accounting can have towards a curtailment of waste in industry. The basis for the statement and arguments was the report of an investigation concerning waste submitted to the "over-arching engineering organization," "The Federated American Engineering Societies," which had elected Herbert Hoover for its first president. 18 engineers constituted a special committee to make the investigation with J. Parke Channing chairman and L. W. Wallace, vice-chairman.

In explaining and discussing the report, Mr. Alford said in part:

"An important feature of this plan of study was the effort to show cause for the conditions revealed. In this fact we may see a reason for the impatience engineers have at times shown for traditional cost accounting methods. A record of results so compiled as to give no information as to causes is of little value to anyone who wishes to make improvements. It is gratifying that those who are leading cost accounting advancement today are insisting that cost records shall show causes for variation in cost and early enough in the progress of the work to permit of cost control.

Waste in industry is attributed in the main to four reasons.

1. **Low production caused by faulty management of materials, plant, equipment and men.**
2. **Interrupted production, resulting from idle men, idle materials, idle plants and idle equipment.**
3. **Restricted production intentionally caused by owners, management or labor.**
4. **Lost production caused by ill health, physical defects and industrial accidents.**

Study 125 Industrial Plants

"Turning to the Waste Report we find that a group of about 50 engineers spent two months in making field studies in detail in about 125 industrial plants, and securing some data from nearly 100 others. These were in six industries.

"Building Industry.
"Men's Ready-Made Clothing Manufacturing.
"Boot and Shoe Manufacturing.
"Printing.
"Metal Trades.
"Textile Manufacturing.

"From the six field reports written from these field studies, and the seven statistical reports a summary was compiled, forming the findings of the committee as a whole.

"This states that waste in industry is attributable to:

"1. Low production caused by faulty management of materials, plant, equipment and men.
"2. Interrupted production, resulting from idle men, idle materials, idle plants, idle equipment.
"3. Restricted production intentionally caused by owners, management or labor.
"4. Lost production caused by ill health, physical defects and industrial accidents.

"The relative opportunity and hence responsibility for eliminating this waste was assessed on the engineers' evaluation sheets as given in the following tables:

	Responsibility Assayed Against Management Points	Responsibility Assayed Against Labor Points	Responsibility Assayed Against Outside Contracts, (The Public, Trade Relationships and Other Factors) Points	Total Points
Men's Clothing Mfg.	48.33	10.50	4.95	63.78
Building Industry	34.30	11.30	7.40	53.00
Printing	36.36	16.25	5.00	57.61
Boot and Shoe Mfg.	30.25	4.85	5.83	40.93
Metal Trades	23.23	2.55	2.88	28.66
Textile Mfg.	24.70	4.70	19.80	49.20

"The term 'management' as used in this part of the report refers to the agency (owners or managers) which exercises the management function in industry. This function is defined in a report approved by the management division of the American Society of Mechanical Engineers as:

" 'Management is the art and science of preparing, organizing and directing human effort applied to control the forces and to utilize the materials of nature for the benefit of man.'

How Responsibility Is Fixed

"The 'responsibility' of a given agency as here used does not mean moral responsibility as ordinarily understood, but only that responsibility which arises from the undeniable fact that a given cause of waste can be removed only by a particular agency. 'We measure responsibility not by the thing done, but by the opportunities which people have had of knowing better or worse.'

"The relative responsibilities have been evaluated in 'points.' A theoretical total of 100 points represents all possible waste. As no plant is or could be entirely wasteful the number of points assigned in any case must be less than 100.

"From the preceding table are derived percentage values for each of the agencies against which responsibility is assessed, as follows:

Industry Studied	Responsibility Assayed Against Management, Per Cent.	Responsibility Against Labor, Per Cent.	Responsibility Assayed Against Outside Contracts. (The Public, Trade Relationship, and Other Factors), Per Cent.
Men's Clothing Mfg.	75	18	9
Building Industry	65	21	14
Printing	63	28	9
Boot and Shoe Mfg.	73	11	16
Metal Trades	81	9	10
Textile Mfg.	50	10	40

"'The quantities presented above justify the following statement: over 50 per cent. of the responsibility for these wastes can be placed at the door of management and less than 25 per cent. at the door of labor, while the amount chargeable to outside contracts is least of all.'

"It is believed that these quantities are not exceptional in American industry but are fairly typical.

Function of the Cost Accountant

"This being so, how will American cost accountants discharge their proportion of the responsibility for the elimination of waste? May I hazard a suggestion or two. Some one must see to it that investigations of this kind are made at intervals in every plant on a basis that will really measure the effectiveness of management, of labor and possibly of outside agencies. Who is better fitted to do this than the cost accountant? We need a continuing record which shall really 'Count the Cost' or determine the efficiency of promoting, producing and selling. This must be actual measurement, for once we begin to measure, then we begin to progress. Seemingly, this measuring function belongs to the cost accountant.

"The report of the American Society of Mechanical Engineers further states:

"'The majority of the industrial plants studied lack knowledge of costs and have no cost control. Therefore there is no adequate method of judging fairly and accurately when improvements are needed and when waste is occurring. Not having the facts prevents prompt correction of defects. The above conditions are disclosed, for example, in the report on the metal trades. A survey of the printing plants in New York City made by the United Typothetae showed that:

"'56 plants use standard cost system.

"'187 plants with no cost system, but with a knowledge of all general costs.

"'741 plants with no cost system and incomplete knowledge of all general costs.

"'554 plants with no cost system and incomplete knowledge of general costs.

"'The first two groups made money, the last two lost money in 1919.'"

* * *

ENGLISH ROADS COMPETE WITH RAILROADS

Specifications for roads in England today require the laying of an 18-inch base for all highways. On top of this base is placed a composition called Tarmac. These roads are designed to permit hauling over them of steam lorries or traction engines, each engine pulling about three cars capable of carrying five tons each. With the advent of these steam lorries, railways complained to Parliament with the result that a tax has been placed on these motor buses to equalize competition.

There are approximately 2,500,000 miles of alleged highways in the United States and about 250,000 miles substantially of railroads. The use of such a contrivance as above mentioned would go far toward converting many of the 2,500,000 miles into strong competitors for the railroads.

* * *

STULL BECOMES SUPERVISING CHEMIST

On May 1, R. T. Stull was relieved of the superintendency of the Ceramic Experiment Station of the Bureau of Mines at Columbus, Ohio, and made supervising ceramist for the bureau as a whole. He will act under the direction of the chief mineral technologist and will have supervision in technical matters in ceramics, and such related investigations of non-metallic minerals as may from time to time be assigned to him. Mr. Stull will have administrative as well as technical supervision of field work in the kiln investigation carried out in cooperation with the four heavy clay products associations, including the laboratory car "Holmes" and its crew. Until otherwise ordered, he will make his headquarters at Columbus, Ohio, but his services will be fully available for consultation by all branches of the bureau concerned with ceramics. George A. Bole has been designated acting superintendent of the Ceramic Experiment Station at Columbus, Ohio.

R. T. STULL

* * *

TRAVELING MEN TO MEET IN CINCINNATI

The first annual convention of the National Association of Traveling Salesmen, Inc., will be held at Cincinnati, Ohio, on October 9 to 11, 1922. All traveling salesmen's organizations thruout the United States are invited to send a delegation to the national gathering.

* * *

MEET JUNE 19 TO FORM COUNCIL

Invitations have been issued by the temporary directing committee of the American Construction Council to all men interested in the construction industry to attend the organizing meeting of the Council in Washington, D. C., June 19 and 20. The step contemplated, that of bringing together for cooperation in behalf of the industry and of the public all the elements of construction activity—engineers, architects, labor, contractors, manufacturers and dealers, and the financial interests—is epochal in American history. This movement promises to have the full support of the entire industry. The meeting will be held in the Washington Hotel and Secretary of Commerce Hoover will preside.

SEWER PIPE MEN MEET IN LOUISVILLE

The Clay Products Association, which holds monthly meetings in Chicago, "went a visiting" on May 15 and 16, going to Louisville, Ky., for the monthly meeting. Alluring pictures of the spring racing season, of good times to be had, as painted by A. P. McDonald, of the P. Bannon Pipe Co., of Louisville, were probably responsible. Morning meetings were held at the Seelbach Hotel, the afternoons being given over to watching the thorobreds perform at Churchill Downs.

BRICK ROAD GOOD AFTER 30 YEARS

An article in a recent issue of Engineering and Contracting describes the service given by brick pavements in Lynchburg, Va. Boyd A. Bennett, director of public works of Lynchburg, is the author. The feature of the write-up is a description of a 30-year old brick pavement on Court Street, which was laid on a sand filler. This paving is in good condition today, and no improvements are contemplated with the exception of keeping out the holes caused by settlement. Mr. Bennett comes to the conclusion that while brick pavements cost more in the beginning they are worth it because of the long life and low maintenance cost, and that thoroly compacted natural soil with good drainage, covered by a sand cushion, forms a successful base for brick pavements for moderate traffic.

Clay Drain Tile Has Made Iowa a Prosperous State

Editor's note—This article was written by C. B. Platt, secretary of the Permanent Buildings Society, for the Des Moines (Ia.) Register and reprinted from that publication. Mr. Platt is the most prominent figure in Iowa's clay industry and in view of the fact that he has been associated with it for a great many years, his remarks can be considered authoritative.

THE AVERAGE PERSON who hears or reads about the greatness of Iowa and her unlimited wealth, does not appreciate fully that Iowa clay products have had a great part in the development of Iowa. Iowa made clay tile has made Iowa.

Few people realize that the vast estate lying to the north of the main line of the Chicago & Northwestern railway is very largely reclaimed or tile drained swamp land. As one drives to the north from Des Moines many very straight "creeks" are observed. These are constructed or excavated outlet ditches serving thousands of miles of mains constituting drainage districts, and these great systems of drainage ditch mains, in which clay drain tile of from 18 to 42 inches in diameter is generally used, serve as outlets for farm drainage systems in which almost countless miles of smaller tile are or will be used.

To give an idea of the magnitude of the tile drainage operations in Iowa, Dean A. Marston of the engineering school at Ames, stated some eight years ago that the drainage projects in, under way and projected would require the expenditure of more money than was required to construct the Panama canal. In two counties in Iowa tillable lands were increased thru tile drainage, over 64,000 acres in nine years. In addition to this thousands of acres were improved in output capacity from 50 to 100 per cent. thru the use of drain tile.

$1,500,000 Spent for Labor

It requires 25,000 railroad cars to deliver the drain tile used and manufactured in the state each year. Under normal conditions the Iowa clay products factories pay out for labor for the manufacture of drain tile practically $1,500,000 annually. From this it is apparent that a large capital investment is necessary in assuring a sufficient and regular supply of drain tile, and it is true that the Iowa clay plants have expanded as rapidly as the increased demand made it necessary to expand.

Originally tile and brick were made in Iowa from what is termed surface clays, but these clays were so difficult to work and required so large a provision for wear in the process of manufacture that they have been gradually dropped and given place to hard clays designated as shales. These deposits of shale are in many cases covered by deposits of waste materials and the expense of removing this overburden has made it necessary to use modern engineering ideas and we find that in several Iowa plants today hydraulic equipment, which removes large yardages of this overburden daily is used.

Road Drainage Highly Important

While it is estimated that Iowa will still be far from completely tile drained 60 years from now, it is a matter of no little importance to the tile industry that it has been found practically necessary to tile drain all graded highways, and particularly necessary if such highways are to be hard surfaced. The idea in tile drainage of highways is not to carry off the rainfall, which usually passes off to the open ditch along the sides of the road, but to keep the ground water from soaking up the block of earth directly under the grade. This effect will of course be more pronounced when the grade is hard surfaced or waterproofed thru the use of road oil. Earth which is dry and kept dry does not change its position materially and consequently to insure the dryness of the subsoil underneath the road way is to insure no settling thru a softening, or expansion or heaving thru the action of frost.

In the tile drainage of highways two lines of tile, usually six inches in diameter, are run on either side of the grade, as nearly as possible four feet below the surface. These tile are provided with outlets as they reach the different drainage levels. At this time the tile drainage of highways is chiefly important in that it employs in the process a great deal of labor. About two cars and a half of drain tile are required to tile a mile of highway and therefore the work projected for the coming year will be a most important factor in keeping Iowa's foremost industry partially active.

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

A WONDERFUL CHINA DISPLAY ROOM

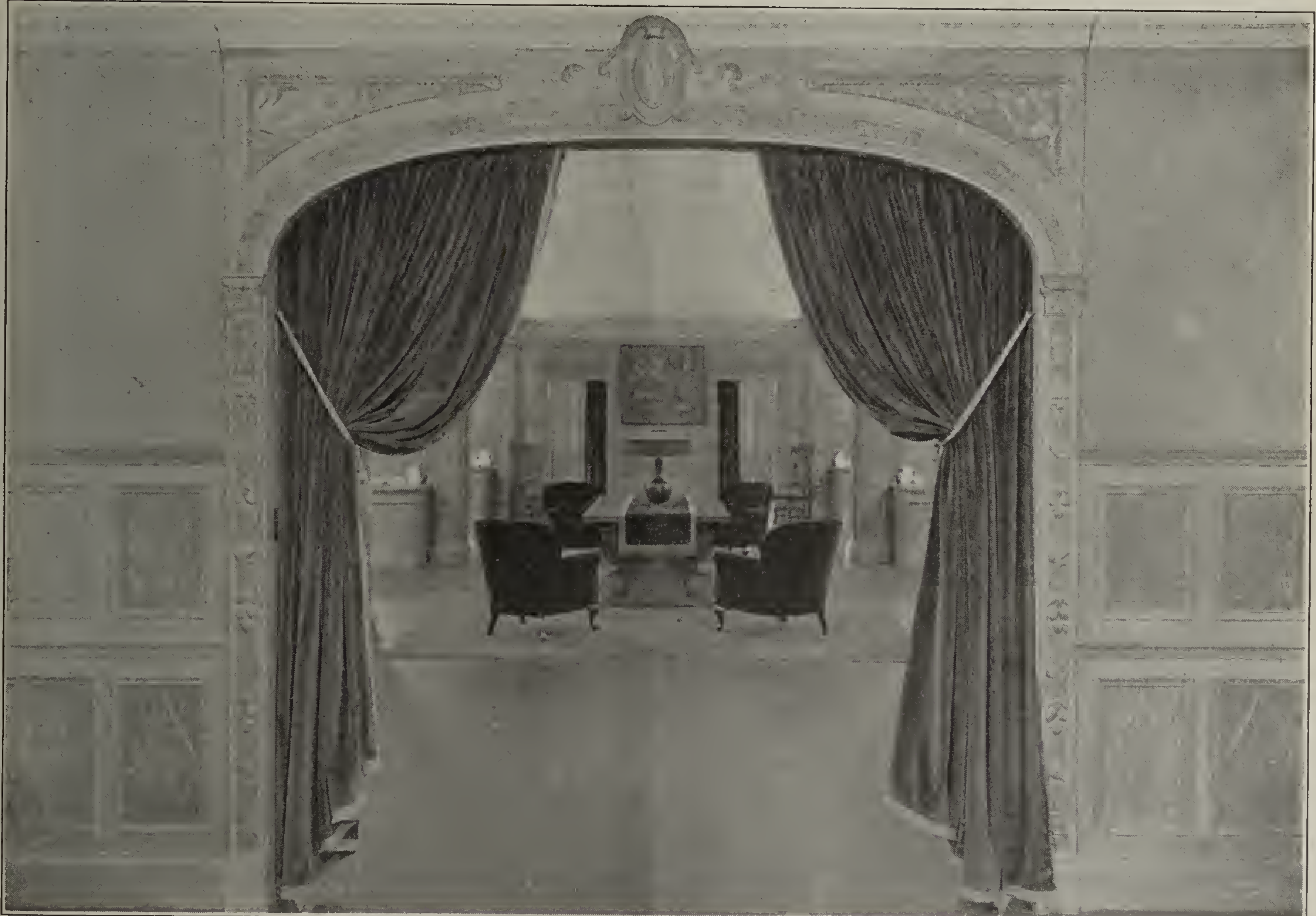
THE SPLENDOR of the sample room of the Homer Laughlin China Co., Newell, W. Va., cannot be described in adjectives. There is nothing like it in the United States, therefore it cannot be compared with any display arrangement. Nothing is lacking in detail. The hand of the master is evident in the artistic arrangements. In harmony of colors, there is that soft blending which adds richness to all surroundings. Everything within the room has been worked out in harmony; there is nothing missing from an artistic point of view. And what is still better, the character of the merchandise displayed in this lovely room is of that high standard of quality which not only bespeaks the progressiveness of this firm, but mutely tells of the wonderful advancement made within the last years by the American potter.

It was almost a year ago that the Homer Laughlin China Co. laid plans to design a new sample room. A month later work was under way. Contracts were awarded the James C. Hoes Sons, New York, and the Homer Laughlin China Co.'s sample room now stands as a monument to their efforts.

Details Are Well Worked Out

The lighting arrangements are such that no ray of sunlight enters this new sample room. The soft glow of the sun seems to beam thru the large cathedral glass-panel windows on the south side of the room. This single lighting effect causes one to stand in wonderment.

From the main office of the company, the visitor is



Main Entrance to Beautiful New Sample Room of the Homer Laughlin China Co., Newell, W. Va.

Another Section of the Sample Room Showing Extensiveness of Display of Decorated Dinnerware. The Photographs Do Not Do the Beauty of the Room Justice.

taken to the second floor, and there has been built what might be properly termed an ante room. From this room doors open to the stairway leading to the sample room. The steps are of polished oak. At either side of this stairway is a length of two-inch hemp rope each length being covered with mulberry colored silk velour, the seam of which is hid from view. Ascending these steps, one is compelled to glance upward and observe an arched ceiling, done in old ivory and with buried cornice lights sending forth their rays in a flood over the entire arch.

It is here that one begins to absorb the beauty of the thing. When one ascends the stairway, standing on quarter-inch battleship linoleum, there is that something which causes the visitor to pause, if only for a moment.

Then it is that the magnificence of this new sample room begins to impress itself. True, one can observe parts of the entire space of 150 by 50 feet, but here and there more is to be observed. This space has been divided into three spaces, at either side of which are booths, and it is in these booths that the two hundred-odd dinnerware decorations are shown on the four dinner shapes of this firm.

Commercial Display is Separate

At the top of the stairway, to the left, is the commercial department of the sample room. It is a most delightful corner. A beautiful, hand carved, flat top, antique birch finished desk has been provided, and placed here and there are chairs to match the desk. To the right of the commercial department is arranged the first sample booth, and in the center of this booth, just beneath the cathedral glass-panel window is a spacious window seat, on which has been placed a mulberry colored silk velour cushion extending its entire length. There are two such seats arranged in the sample room.

Passing from this part of the sample room into the center room, over which the arched ceiling extends, one walks past a wall division in which has been built an arched entrance. Each doorway has been closed with mulberry silk velour draperies, finished in old ivory fringed edging. In the center of the arch at the "keystone" is an old ivory finished raised panel design in which has been worked the initial monogram of the firm. On the opposite side of the arch is another oval-shaped panel also showing the raised monogram of the company.

A very beautiful piece of Chinese woven tapestry, probably 36 inches square, has been suspended on the wall between the two arched entrances into the second display room, and beneath the arch.

Furnishings of Richest Designs

On the center north wall of this room has been hung a bust portrait, in oil, of W. Edwin Wells, president of the Homer Laughlin Company, a gift of esteem from the company. It is a most delightful likeness.

Directly beneath the arched ceiling in this room has been placed a hand carved oak table, on which has been placed a large electric portable lamp, the color and design of which is in harmony with the other surroundings of the spacious room. At either side of this room, and in a third room beyond, display booths have been built. In the center of each booth has been placed one birch-finished table. These tables will be kept vacant at all times except when being used for the displaying of patterns during an interview.

All wood work is straight grain oak and finished in "Lenox Gray."

The booths are separated one from the other by a four foot nine inch wall or partition, and at this height the visitor can have a clear observation of the entire sample room.

Invisible Heating and Ventilation

All ceiling panels and art designs on the columns are hand carved plastic relief work and are in Italian renaissance. Walls and ceiling are finished in old ivory. All draperies are mulberry silk velour.

The heating and ventilation system is not exposed in any part of the sample room. Fresh air is obtained thru ducts back of the cathedral glass windows, and then forced about the room thru openings built in the base of the display counters. Foul air is forced out of the room thru other ducts. The heating system is also concealed under the counters. Warm air enters the room thru openings in the top of the display counters. This system of heating and ventilation insures circulation at all times of only the purest air.

At the extreme east end of the sample room is a secret door, the location of which is barely noticeable to the naked eye, except at very close range. A push button, similar to that usual in electric lighting systems is used to unlock the door from the sample room side.

A very interesting arrangement of hand painted covered jugs, open and covered "salads" is a salient feature of the ceramic display, the work of Frank Nentwick, long identified with the decorating department of the Homer Laughlin China Co. He did not labor in vain. This special exhibit has been placed in a booth in the center section of the sample room, and the work of the artist is of such high character that it has been praised highly by all who have observed the assortment.

Display Room is Unqualified Wonder

In the arrangement of the skeleton sets on the display counters in the booths there has been no crowding, in fact there is evenness of space between the different items which adds charm to the entire exhibit.

It is a matter of common knowledge that considerable pride inspired the work of everyone of the Homer Laughlin organization who had any part in the opening of this new sample room.

So today, there is in the American pottery industry, and located in West Virginia, a sample room to which the entire pottery industry of America can point with just pride, and feel absolutely secure in the thought that nothing similar has ever been designed, and it is exceedingly hard to conceive of anything superior. And what is still more assuring, is that the quality of the merchandise displayed is equal to any that has been worked out by the ceramic chemist. Therefore, this sample room is the "wonder room" of the American pottery industry.

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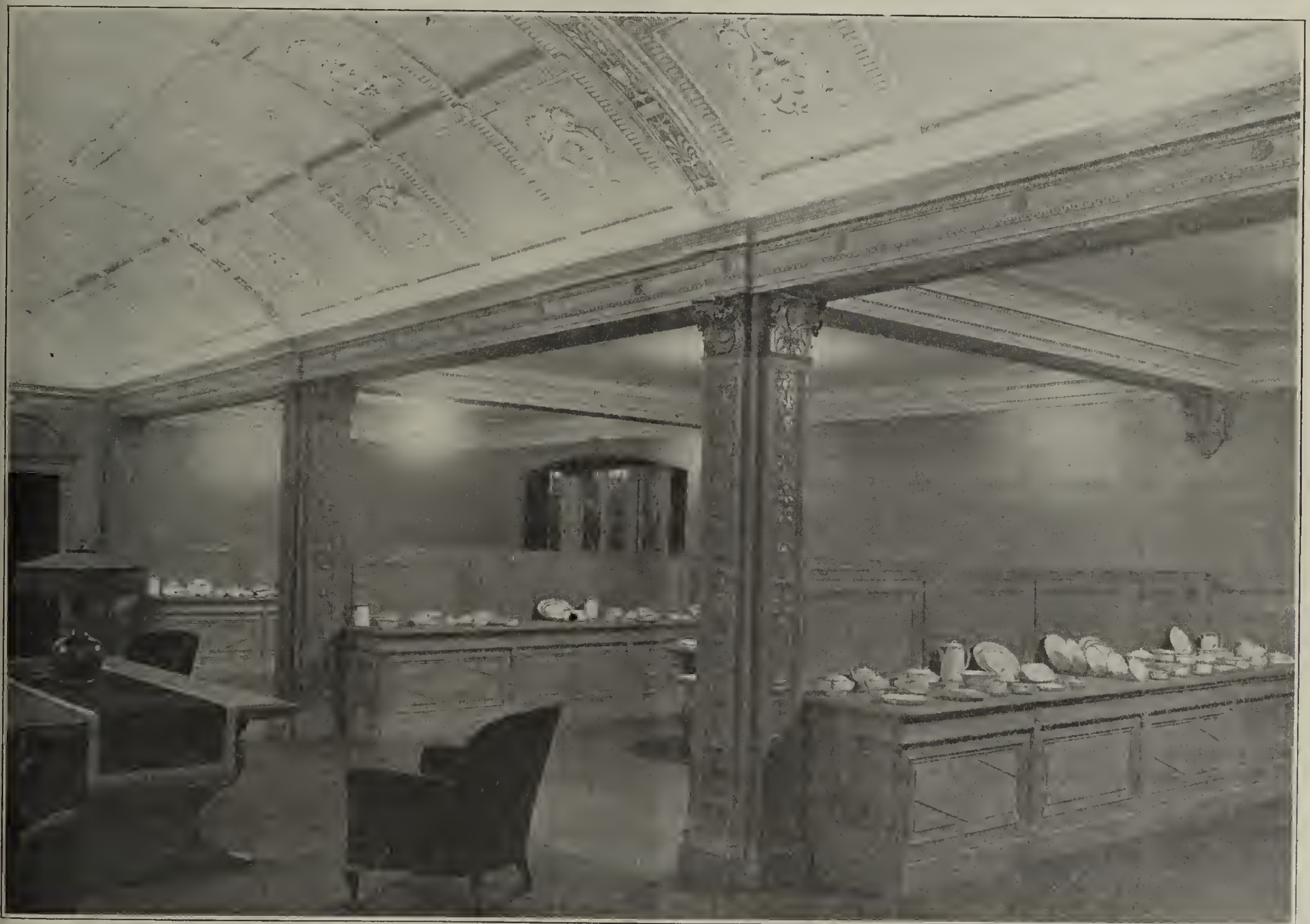
PROSPECTS BRIGHT FOR NEXT SIX MONTHS

In the majority of instances generalware pottery manufacturers in the East Liverpool, Ohio, district have from 60 to 90 days' business on file. There is a division of opinion, however, as to the volume of high grade border dinnerware orders on file, but in a general way, it appears as if all generalware plants will operate under favorable schedules thruout the last six months of the year.

Some of the larger generalware potteries in the Eastern Ohio district made new production records in April, and it is a bit too early now to get reports for production for May. However, some particular plants in the East Liverpool district show the peak of production during April for any month they have been in business.

Immediate business on good dinnerware patterns is not as active as during the previous two months' period, but this is



Middle Section of Display Room, Showing Decorated Arched Ceiling and Hidden Lighting Effect. Note How Tastefully Everything Has Been Arranged.

considered seasonable. Majority of pottery manufacturers have good orders on file for "scheme" selection and whiteware. The demand for "scheme" ware is said by many in the trade to be better now than for many months, while the demand for high grade border open stock dinnerware is only nominal.

Merchandise managers of department stores seem to be holding back china department buyers, to the ordering of only immediate requirements. In the end, however, this system is producing more orders, but for smaller quantities. The aggregate volume for the year, however, will be equally as large during 1922 as it was during 1921, and may exceed the record for the previous year.

Large furniture and hardware houses have not only been liberal purchasers of open stock dinnerware patterns so far this year, but they have also been ordering liberally of dinner sets, the composition ranging from 32 to 100-piece sets.

Jobbing interests and mail order houses have been among the most liberal buyers of decorated dinnerware this season. This is especially true with reference to the southern trade. Carlot business has been the rule with the majority of these distributors.

New dinnerware patterns for 1923 are now being purchased, but these editions of decals will not be delivered until late in the fall, and orders for the new line will not be booked for delivery much before February next.

The current market on domestic dinnerware is firm at prevailing lists. There is not likely to be any decline in the wage scale of operative potters this year, while the material market shows no signs of weakening.

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THE ELECTRICAL PORCELAIN INDUSTRY

Discussing the present situation in the electrical porcelain industry, Paul G. Duryea, vice-president of the Cook Pottery Co., Trenton, N. J., specializing in this line of manufacture, says that conditions are satisfactory and that the outlook for the future is most encouraging. Incoming orders indicate that surplus stocks are rapidly being absorbed and the immediate trend is towards healthy improvement and betterment.

This company, it is pointed out, produces low tension, or dry process porcelain, or the material that forms the standard items generally sold to jobbers, and which enter directly into the construction of a building, as well as the standard porcelains for wiring devices, and the like. As this material forms a basic feature in the trade, improvement, naturally, is expected in this line first. That such a situation exists, is indicated by Mr. Duryea's statement that the aggregate value of standard porcelain shipped during March last was 67.5 per cent. of the total of the corresponding month in 1921, but as the price level is now 55 per cent. below that of the previous year, the increase in volume approximates close to 50 per cent. for the 1922 period. Standard porcelain, it is set forth, is being marketed today at less than the actual cost of manufacture, and it is believed that a price advance is not far distant; it will come just as soon as building operations have proceeded to a point to stimulate demand.

Speaking of special electrical porcelain, it is explained that the high tension material made under the wet process forms a distinct business in itself, and as a rule, the manufacturer of standard porcelain cannot produce satisfactory designs of this character, where accuracy, dielectric strength and superior finish are essential, nor could the producer of special porcelain, on the other hand, invade the field of the standard material and secure successful attainments.

In the special porcelain branch, the improvement has not been shown to the same extent as in the standard porcelain market. Factories in this line, it is stated, are operating at from 25 to 45 per cent. of regular capacity. Prices are approximately doubled over those of 1915, and the average buyer finds it hard to understand why special porcelain figures should not recede to pre-war levels, the same as in the case of various other commodities.

The explanation, Mr. Duryea says, is in the fact that raw materials, including flint, feldspar and imported clays are costing about 100 per cent. more than heretofore, while American clays and coal are running about 150 per cent. higher. Labor, always a primary factor in manufacture, is receiving from 100 to 300 per cent. in advance, as compared with 1915 levels. As all costs of production rest on these features, and transportation, it is easy to understand, it is said, that further liquidation in manufacturing costs must come, before there can be any further reduction in market quotations.

The course of action, Mr. Duryea sets forth, lies "straight before us. To reduce the cost of production to the lowest point possible consistent with the highest quality, to work hard in season and out of season, and to look forward with confidence. Do these, and our success is assured."

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NEW CHINA RATE FOR POPLAR BLUFF

A new freight rate on China clay between Poplar Bluff, Mo. and Ohio, Indiana and Michigan has been secured by the traffic department of the Poplar Bluff Chamber of Commerce. Under the new scale the rate per ton to Sebring, Ohio, which was formerly $7.44½, will be $5.83½. A considerable saving to the promoters of the new China clay mines in Butler County will result from this reduction.

* * *

FORM POTTERY IN NORTH CAROLINA

The Old Fort (N. C.) Pottery Works has been incorporated by J. H. Young, J. A. Lowry and H. Jeggein. The company announces that it will manufacture utility ware flower pots and the like cut of pottery clay found in the vicinity of Old Fort.

* * *

NEW POTTERY IN GEORGIA

Acworth, Ga., has a new and modern pottery plant, established for the manufacture of artistic pottery such as jardenieres, fancy vases and the like for wholesale trade. J. P. Reed, who has spent his life time in the work, has personal management of the enterprise.

* * *

NEW FLOOR TILE COMPANY

W. D. Bellingrath and associates have incorporated the National Floor Tile Co. with a capitalization of $144,000.

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MAKING RADIO PORCELAINS

The Star Porcelain Co., Trenton, N. J., is devoting a portion of plant production to the manufacture of porcelain specialties for radio apparatus. A recent order for material of this kind has been secured from M. M. Fleron & Son, Inc.

* * *

FORM $2,000,000 CORPORATION

The Pacific Sanitary Manufacturing Co. is the name of a $2,000,000 corporation in which have been combined three pottery plants located at Richmond, Cal. A 100 per cent. increase in output is hoped for. The officers are, N. W. Sterns, president; M. E. Wangenheim, first vice-president; E. S. Wangenheim, second vice-president; Miss May Blum, secretary.

Current Prices of Common Building Brick Six Inch Drain Tile and Hollow Building Tile

REVIVAL OF BUILDING practically all over the entire country with a resultant tremendous increase in the consumption of clay products is reflected in this month's list of current prices. A very decided stiffening of prices is evident. Out of 80 cities reporting, only 14 have changed the common brick price. Of these revisions, seven were downward and seven showed increases. The price of brick in New York City jumped $4 to $24. Scranton, Pa. showed an increased of $2 and Newark, N. J., $5. Reductions were for the most part very small, with the exception of San Diego, Cal., where a $5 drop to $14 was recorded.

Only six cities changed the price of six inch drain tile, and of these three were up and three were down.

5x8x12 hollow tile prices changed in eight cities, the greatest change being recorded by Nashville, Tenn., where the price dropped from $96.60 to $75.80. Other changes were slight, in no case more than $10 up or down.

	Common Brick Per M	Drain Tile (6″) Per Ft.	Hollow Tile (5x8x12) Per M
Portland, Me.		.15	
Boston, Mass.	17.00	.2025	
Providence, R. I.	26.00	.20	
Hartford, Conn.	16.00	.14	
New Haven, Conn.	21.00	.125	
New York City	**24.00**	....	117.90
Albany, N. Y.	20.00	.155	200.00
Utica, N. Y.	18.00	**.0675**	
Syracuse, N. Y.	18.00	.125	
Oswego, N. Y.	25.00	....	
Binghamton, N. Y.	16.00	.105	
Elmira, N. Y.	**22.00**	....	
Rochester, N. Y.	16.50	.11	
Buffalo, N. Y.	18.00	.12	65.00
Jamestown, N. Y.	25.00	....	110.00
Allentown, Pa.	20.00	....	
Erie, Pa.	23.00	.095	70.00
Philadelphia, Pa.	17.00	....	
Reading, Pa.	19.00	....	
Pittsburgh, Pa.	16.00	.12	**84.00**
Scranton, Pa.	**22.00**	.14	
Newark, N. J.	**25.00**	.1675	100.00
Paterson, N. J.	19.00	.17	
Trenton, N. J.	17.00	....	
Wilmington, Del.	22.00	....	
Washington, D. C.	19.00	.10	
Baltimore, Md.	19.00	**.16**	
Norfolk, Va.	16.00	.12	
Richmond, Va.	16.00	**.15**	
Huntington, W. Va.	15.00	.12	75.00
Fairmont, W. Va.	24.00	.095	75.00
Wheeling, W. Va.	20.00	.09	65.00
Atlanta, Ga.	12.35	.11	
Miami, Fla.	**23.50**	....	95.00
Tampa, Fla.	15.00	....	120.00
Louisville, Ky.	18.00	....	79.00
St. Petersburg, Fla.	17.00	....	95.00
Lexington, Ky.	19.00	.11	80.00*
Memphis, Tenn.	13.50	.09	75.00
Nashville, Tenn.	**14.00**	.11	**75.80**
Birmingham, Ala.	15.50	....	67.40
New Orleans, La.	10.00	.12	

Editor's Note.—The prices of the commodities listed above are reported as delivered on the job, and are, therefore higher than the plant prices. These prices are obtained from a sister publication, Building Supply News, and are sent to this paper by dealers in the various cities listed. Brick and Clay Record will appreciate any corrections. The prices marked in heavy type denote changes from last list.

	Common Brick Per M	Drain Tile (6″) Per Ft.	Hollow Tile (5x8x12) Per M
El Paso, Tex.	16.00	....	81.00
Houston, Tex.	**18.00**	.16	**86.00@**
Dallas, Tex.	11.15*	.20	75.00
Little Rock, Ark.	12.50*	.15	
Oklahoma City, Okla.	14.75	.055‡	85.00
Cincinnati, Ohio	16.00*	.09	68.00
Cleveland, Ohio	14.00	.07	**60.00**
Columbus, Ohio	....	.08	
Toledo, Ohio	16.00	.075	75.00
Detroit, Mich.	16.00	.12	**90.00**
Evansville, Ind.	14.00	.04	55.00
Fort Wayne, Ind.	**16.00**	.07	70.00
Indianapolis, Ind.	**18.50**	.10	67.50
South Bend, Ind.	19.00	.04	100.00
Terre Haute, Ind.	15.00	....	
Bloomington, Ill.	18.00	.09	75.00
Chicago, Ill.	12.00	.10	75.00
Moline, Ill.	18.00	.11	**75.00**
Peoria, Ill.	14.00	.11	**53.00**
Green Bay, Wis.	14.00	.08	85.00
Milwaukee, Wis.	14.50	**.08**	80.00
St. Paul, Minn.	16.00	.09	75.50
Davenport, Iowa	17.50	**.09**	
Des Moines, Iowa	**18.00**	.12	75.00
Sioux City, Iowa	16.50	....	**75.00**
Kansas City, Mo.	22.00	.0625	
St. Louis, Mo.	14.00	**.175**	65.00
Lincoln, Neb.	**16.50**	.09	70.00
Denver, Colo.	12.00	....	85.50
Butte, Mont.	17.00	....	15.00§
Los Angeles, Calif.	....	.0975*	100.00§
San Diego, Calif.	**14.00**	.14	120.00
San Francisco, Calif.	17.00	.065	**108.00**
Portland, Ore.	**17.00**	.10	95.00
Seattle, Wash.	16.00	.09	110.00
Cheyene, Wyo.	20.00	....	
Winnipeg, Man.	18.00	.15	105.00
Toronto, Ont.	18.00	.11	
Halifax, N. S.	21.50	....	
bec, P. Q.	**19.50**	.115	

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*Little Rock, Cincinnati, Los Angeles, Atlanta, Lexington Dallas, f. o. b. cars.

§Los Angeles, Heath tile; Butte, per ton at yard.

@Hollow tile, Houston, car loads.

†Quebec, common brick, f. o. b. sheds.

‡Drain tile, Oklahoma City, four inch.

Doing Wonders With Common Sense!

In most every clay plant regardless of size or capacity, there is room for changes which will effect better economy.

Waller Crow Engineers have aided clay plant operators to reduce their cost in this way; the application of common sense.

Don't buy heavy priced machinery before you consult us. It may not be necessary to make a purchase.

Write today for complete information.

Catalog on request

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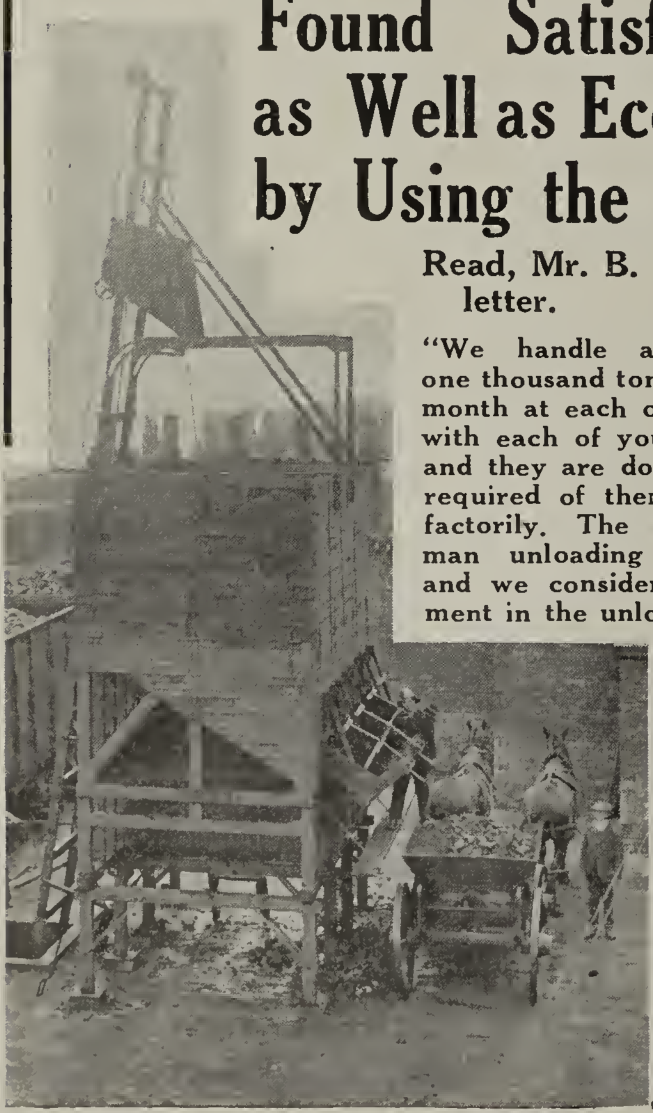
Engineers
COUNSELLORS IN INDUSTRIAL
OPERATION & FINANCE
327 S LA SALLE STREET
CHICAGO

And Still Another Who Has Found Satisfaction as Well as Economy by Using the Galion



Read, Mr. B. B. Belden's letter.

"We handle approximately one thousand tons of coal per month at each of our plants, with each of your unloaders, and they are doing the work required of them very satisfactorily. The saving over man unloading is material and we consider our investment in the unloaders a good one."

Have you investigated the Galion Unloader? Do so Today!

The Galion Iron Works & Mfg. Co.
GALION, OHIO

The Superintendent

Helpful Hints for Practical Men Whose Problem Is Maximum Production with Minimum Cost

OVERCOMING AIR HOLES IN BRICK

An eastern fire brick plant recently installed a horizontal pug-mill type automatic soft mud brick machine which performs the following operations automatically: mold strike off, mold bumping, mold dumping and mold sanding. It is capable of making more than 6,000 nine-inch brick per hour, requiring three men at the machine. Of these one operates the machine, one feeds the pallets and one regulates the tempering of the clay.

The brick which are made according to this process are dried in a Proctor dryer and to a stage at which they are still capable of reshaping. They are then repressed and dried completely in another Proctor dryer.

The first difficulty which was encountered in using the automatic brick machine was the presence of air holes in the blanks. The pug-mill knives were of large area and merely conveyed the mix to the front of the machine, where it piled up and fell back. In this manner air was entrapped in the mass so that the air valves on the plunger were unable to remove it.

This defect was entirely eliminated by covering the pug-mill approximately one-half of its length, and also by equipping the pug-mill with narrower steel knives. The mixture is now pugged under pressure and the blanks are free from air holes when the machine is kept full of clay.

Another interesting feature in this connection is that live steam is introduced near the plunger of the brick machine, providing an aid to drying. The brick are then placed in the dryer at a temperature of approximately 135 deg. F., which permits the starting of the dryer at a much higher wet bulb temperature than when the clay is pugged at a normal temperature. The time of drying in this manner is reduced.

REDUCING BELT SLIPPAGE

Nearly every clay plant which uses belts to drive the various mechanisms in the machine room finds belt slippage due to the ground clay which accumulates on the belt, one of the most difficult problems to overcome.

Various recourses for this difficulty are in vogue. Different treatments are given the belt, but one superintendent claims that the best results are obtained when linseed oil and rosin are boiled together to form a paste and this applied thinly and with care to the belt.

The proportion required varies with the type of belt and amount of clay dust usually present. Experimentation will determine the proper proportion.

Some manufacturers have used cylinder oil with fair success, but this superintendent claims that mineral oil is more harmful to the belt than vegetable oil. Belt manufacturers are usually strong in their condemnation of the use of any such material as that proposed by this superintendent, but the clay plant has unusual situations different from other industries to contend with, and a special dressing is absolutely essential.

START BUILDING 67 BRICK HOMES

The first of 67 brick homes that will be built in the vicinity of Arnsby place. Sherwood and Islington avenues, Cincinnati, Ohio, was started May 15. Each house will contain a minimum of six rooms and the prices will range from $7,500 to $12,000.

Questions and Answers

Best Authorities in Every Clay Working Branch Are Called Into Consultation—Their Advice Is Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

TROUBLED WITH WHITEWASH

1,046. *Ohio—We are troubled slightly with a whitewash on our brick and will appreciate your advice, after inspecting the samples which we mailed to you today by parcels post, on how to eliminate the trouble and if we may look for the trouble in the shale or the drying or burning.*

We are burning in round 32-foot down-draft kilns with open dampers at all times except during the soaking period at the last when the damper is dropped about 12 inches from the bottom about 20 minutes after firing. In most cases the whitewash appears on the brick near the center and bottom of the kiln, but very seldom on the harder burned brick. We have noticed the same coating on the plate casting of the cover plate on the pyrometer couple and at certain periods around the peep holes above the furnaces. It appears most generally on the ends, slightly on the sides and very seldom on the faces. The smooth brick are affected the most.

From the appearance of the one sample we thought perhaps it was the oil. It will appear on one brick and not affect the brick set above or the one next to it. Some kilns will not be affected at all.

Will it be possible to determine from the burned samples or will it be necessary to have an analysis of the shale? If so, will you kindly advise whom we may get in touch with to have a complete investigation made and remedy for the trouble discovered?

Your brick show plainly that for the most part your difficulty is in the burning process. We have noted carefully the dryer car marks on your brick, and the whitewash areas, and this has pointed the evidence to the burning process.

Apparently you face your brick together in the setting, which accounts for the small amount of whitewash on the faces.

We are under the impression that your whole difficulty is most likely to be during the water-smoking period of your burn. Either you are water-smoking too rapidly—not as regards to the clay but in the ability of the kiln flues to take care of the dissipation of the gases, or you are not obtaining sufficient draft during your water-smoking period to sweep out the moisture that could be handled by the kiln flues.

What happens is something like this. The brick from the top part of your kiln begin to give off moisture because they are farther advanced in temperature than the bottom brick. This moisture absorbs the sulphur contained in the kiln atmosphere and which is produced by the combustion of the coal. The action of this moisture and sulphur, which may be condensed on the cooler brick in the lower portion of the kiln, is such that it attacks the lime which is present in the clay and forms calcium sulphate or whitewash.

It is essential during the water-smoking period to permit no condensation in the cool portions of the kiln, and

SERVICE TO YOU

A well managed and complete study of the clay product industry has gained for us a knowledge of exactly the requirements for every type of plant.

Wellington molds are made of A1 Air Dried Cherry and Maple in all types and sizes with panels, etc.

May we quote our price. No obligation.

The Wellington Machine Co.
WELLINGTON, OHIO

GUARANTEED REBUILT MOTORS NEW

ALL STANDARD MAKES AND CAPACITIES

Buy Direct From America's Leading Motor Merchandisers

Make real substantial savings on nationally known standard electrical equipment. Take advantage of correct engineering information gleaned from over twenty years' experience on electrical engineering projects. Know the value of dealing with a dependable electric house that has a national reputation for motor sales and service at low cost.

Select from our vast stock including everything from tiny buffing motors to mammoth heavy duty factory motors. Let us solve your engineering problems, save you money and supply you with equipment of unsurpassed quality.

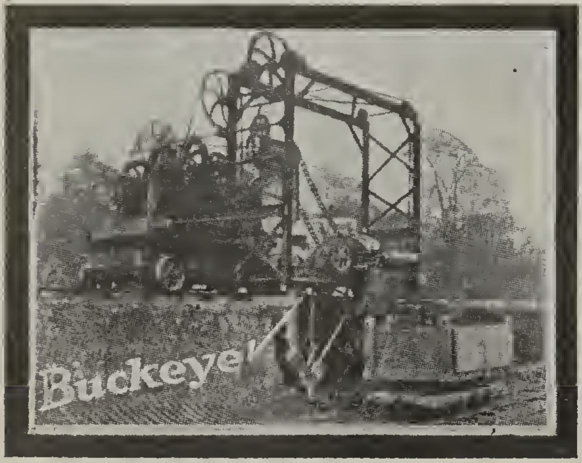
WHAT WE SELL
Alternating current motors.
Direct current motors.
Generators—Meters.
Control apparatus—Motor Pulleys.
Rotary converters.
Frequency changers.
Motor generator sets.
Transformers—Switchboards.
Engine generator sets.

WHAT YOU GET
Benefit of 20 years' experience.
Motors of established reputation.
Full year's guarantee.
Engineering problems solved without cost.
Lower prices.
Money-back guarantee.
Immediate shipment.
Stock available for exchanges.

Electrical Equipment Bought, Repaired or Exchanged

THE FUERST-FRIEDMAN COMPANY
1259 West Third St. Cleveland, Ohio

FUERST-FRIEDMAN Electrical Equipment "Reliability Built In"



The Buckeye Clay Digger

The saving in digging the clay is not the only one with a Buckeye. Thorough mixing when digging means fewer "seconds"—another saving.

Ask for catalog about Buckeye Gasoline and Electric Clay Diggers.

Prompt Shipment

The Buckeye Traction Ditcher Company

Manufacturers also of Buckeye Traction Tile Ditchers

Findlay, Ohio

Branch Sales Offices

New York
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Tulsa, Okla.
Miami, Fla.
Chatham, Ont.
Chicago
Los Angeles
Norfolk, Va.
Mason City, Ia.
Salt Lake City

LABOR SAVING S-A MFG. CO. AURORA ILLINOIS MACHINERY

Adel Excavator

The Continuous Planer

The right machine and the correct method for excavating hard shale, chalk rock and other materials not of a soft, sticky nature. The fine cut taken by the machine thru the different strata and around a large arc gives a thoroughly mixed product which requires minimum crushing and processing.

This machine runs into the shale bank, cutting a swath 54 feet wide and from 40 to 60 feet high. Swinging thru a wide angle the excavator is steadily progressed, making a light cut thru the different strata, yet with such rapidity that the capacity ranges between 50 and 75 tons per hour, according to the material.

S STEPHENS-ADAMSON MFG. CO. A
AURORA, ILLINOIS

of course the remedy is to keep the entire kiln uniform in temperature during the water-smoking period, and to have plenty of draft to sweep out all the moisture liberated.

An ordinary green brick as it is set in the kiln contains about one-half pound of moisture. Presuming that there are 80,000 brick in the kiln, the amount of water that is required to be driven off approximates 20 tons. This water when vaporized occupies a greater volume, and to this volume must be added the water vapor that is carried into the kiln from the air and that which is produced by the combustion of the fuel. The heat in the kiln liberates this moisture from the brick, but draft is required to sweep it out.

If you will attack your scumming proposition from the water-smoking end of your manufacture, and if you will try to use a coal with less sulphur content, we believe you will be working in the right direction to reduce your whitewash.

In the Wake of the News

Being Brief Mention of a Host of Interesting Happenings in the Varied Fields of Clayworking

E. V. ESKESEN GOES TO EUROPE

E. V. Eskesen sailed on May 9 for a two months' trip to Euprope. Mr. Eskesen is president of the New Jersey Terra Cotta Co. of Perth Amboy, N. J.

T. E. YOUNG STATE PLANT SUPERINTENDENT

Theodore E. Young, formerly of Columbus, who has been superintendent of the Paxton Brick Co., of Watsontown, Pa., has been named superintendent of the state brick plant at Junction City, Ohio, succeeding William Aehret, who resigned recently.

J. H. LEMASTERS DIES

John Henry Lemasters, 61 years old, who for many years was connected with the Gill Clay Pot Co. at Muncie, Ind., died recently in a hospital there after a brief illness. He was a member of both the Masonic and Odd Fellows lodges.

F. J. PARRY KILLED BY FALL

Frank J. Parry, secretary of the John H. Parry Co., tile manufacturers of New York City, met his death May 23 by a fall or leap from the 25th floor of the Metropolitan Building. His family believes he was the victim of an accident, since there was no obvious reason for suicide. Mr. Parry is survived by a widow and four children.

DEATH TAKES J. T. DAVIE

John Tait Davie, a pioneer brick manufacturer of Spokane, Wash., died May 20 at the age of 71 years. Mr. Davie began the manufacture of brick in 1880 near Hangman Creek, and made the first brick manufactured in Seattle, which was used for the construction of the first brick building erected in that city. Brick from his plant have been used in many of the important buildings of Seattle. Mr. Davie is survived by one sister and a nephew.

BURIED UNDER 20 TONS OF CLAY

The plant of the Southern Fire Brick & Clay Co. near Hillsdale, Ind., was the scene of an accident recently when a 19 year old youth, seeking work at the plant was caught under a 20-ton fall of clay. The youth was buried for about 20 minutes, resulting in death by suffocation. Employes of the plant made frenzied efforts to rescue the boy, but the amount of clay that fell made it impossible.

PUTS IN PYROMETERS

As an aid in the burning operation the Alabama Brick & Tile Co. of Decatur, Ala., has recently installed pyrometer equipment. This equipment greatly facilitates the burning and is an improvement over the old method in use.

FLORIDA BUYS MANY BIRMINGHAM BRICK

Birmingham, Ala., brick plants are running at 100 per cent. capacity, and report a steadily increasing demand. April orders exceeded in volume any month since the armistice was signed. A considerable part of the output of Birmingham plants is shipped to Florida. John W. Sibley, general sales manager of the Birmingham Clay Products Co., states that face brick shipments from Birmingham to the Tampa district last year were next largest to local orders, even exceeding Atlanta, Ga., which has always been a large consumer of clay products made in the Alabama city. Mr. Sibley has just recently returned from a tour of Florida, and reports great activity in the building line. Permanent highway construction is also being carried on to a great extent. Mr. Sibley during his tour rode over several hundred miles of road paved with Birmingham brick, which are in fine condition tho many of them are over 15 years old.

ENTERTAINS ROTARY AND KIWANIS

In connection with a "Buy-at-Home" week in Tuscon, Ariz., the Tucson Pressed Brick Co. gave a luncheon to the city council, chamber of commerce, and members of the Rotary and Kiwanis Clubs and the Realty Board at their plant on West Congress Street, as a means of advertising its products. The visitors inspected the plant during the noon hour meeting, and everyone who attended had a chance to learn the methods used in the manufacture of brick.

VALLEJO PLANT OPENS

The necessary stock having been subscribed, the Vallejo (Cal.) Brick Works was reopened May 17 after being closed for some time. About 40 men will be employed when the plant is operating.

INCORPORATE SACRAMENTO BRICK CO.

Incorporation papers have been taken out by the Sacramento (Cal.) Brick Co., and the company organized with a capital stock of $155,000. The company has been in existence for some time, and was incorporated as a matter of convenience. The directorate is composed of William B. Dwyer, Robert T. Devlin, A. J. Ashin, William H. Devlin and A. I. Diepenbrock.

INSTALL AUTOMATIC BRICK MACHINE

The tremendous operations at the plant of the Los Angeles (Cal.) Brick Co. have necessitated the installation of a new automatic brick machine at this company's No. 1 plant. Demand for brick, tile and other clay products in southern California continues at an unabated pace, and practically all plants in this region are operating at full capacity. L. S. Collins is general manager of the Los Angeles Brick Co., which has its offices in the Security Building.

"IF WE FAIL - - - - NO FEE"

INCREASED PRODUCTION
WITHOUT NEW EQUIPMENT

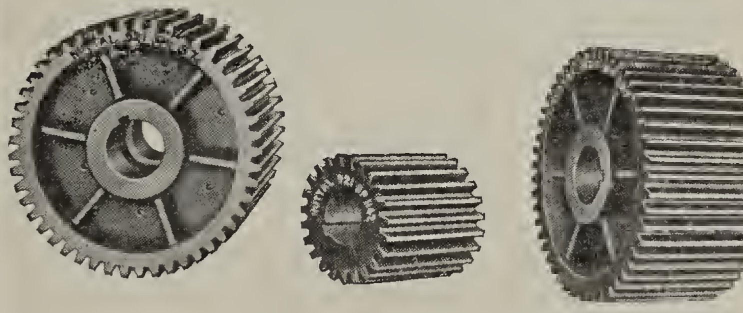
For years our engineering service has materially increased production on clay plants. In every case gratifying results have been accomplished without specification of new equipment.

If you have a problem, let us aid you. We guarantee the lowest possible production costs which present day competition demands.

Write for details

ASH & PFUND
Consulting Engineers to the Clay Industry.
Investigations—Reports—Design —Construction
422 Court Ave., Des Moines, Iowa

An Offer You Cannot Ignore



Somewhere in your equipment is an untreated pinion that is subject to hard usage, rapid wear and has to be replaced frequently.

Send us the data from which to make you a duplicate in our BP Grade. If it does not last at least four times as long in the same service, we will only charge you what you paid for the original.

Look up our last month's advertisement for a brick man's actual experience—over 700% longer life from BP Pinions.

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We Manufacture

CLAY WORKING DIES

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Hollow Ware, Fireproofing Brick and other purposes in dry or lubricating styles.

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PIANO WIRE SCREENS
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FRICTION WINDING DRUMS
CONVEYORS AND ELEVATORS

Ask today for complete information concerning our equipment. No obligation.

Louisville Machine Manufacturing Co.
LOUISVILLE, OHIO

"Sturtevant Drying Systems
Are Economical, Efficient, and Sure"

We maintain a special organization of competent engineers experienced in drying work, as well as a Research Laboratory for conducting investigations to determine correct and economical temperatures, humidities, and velocities of air for the successful drying of your product. We are prepared to furnish complete drying machines, trucks, and trays.

Our recommendations for your particular problem would not obligate you in any way.

B. F. STURTEVANT CO.
Hyde Park, Boston, Mass.
Offices in all principal cities.

ALL DENVER PLANTS WORKING FULL TIME

The building revival during the late winter and spring used up the available brick in Denver, representing surplus stock carried over from last year, before the kilns in the 11 brick plants were fired up for the summer, and consequently a brick shortage became apparent in that city during the latter part of May. A number of building operations have been delayed or stopped for lack of material. The Denver Brick Manufacturers Association promises relief in a short time. All the 11 plants in the city are operating at capacity.

CONNECTICUT PLANTS ARE BUSY

Connecticut brick plants were running at about normal during the latter part of May, according to C. V. King, president of the Connecticut Brick Manufacturers' Association. He stated that there was no great surplus on hand, but the supply was sufficient to furnish brick for any building project in the state without delay. The brick plants in Hartford have a sufficient output to take care of all building contracts without having to import brick from other states. The price of brick has remained at $16 per thousand in Connecticut for more than a year, while the amount used has greatly increased due to more extensive use in building houses.

Some of the brick plants in New York have their product sold far into the summer, and other plants have none at all to sell. For a time the rush for brick being unloaded from barges in the Hudson River district was so great that the police had to be called to restore order.

PUTS NEW SHOVEL INTO PIT

J. B. Ford, president of the Ford Brick & Tile Co. of Harrisburg, Ill., has informed us that his company recently added a power shovel to its pit equipment. This company has also put into operation an air compressor.

SEE BOOM FOR CLAY COUNTY PLANTS

The brick and clay industry in Clay County, Ind., will begin seeing some real home consumption if plans of the newly organized Civic Club of Brazil, Ind., materialize. The organization, cooperating with the farmers' organization in the county, is launching a campaign to use products manufactured in Clay County above all others, provided the products desired can be secured in the county. Officials of the organizations believe the demand thus created will put more men to work.

COOPERATIVE EXHIBIT BOOSTS BRICK

One of the most interesting exhibits of the Home Complete Exposition held at the Indiana State Fair grounds in May was the complete front of a brick home showing the artistic possibilities as well as the durability of brick and masonry construction. The exhibit was the result of cooperation on the part of the Brick Contractors' Association, American Face Brick Association, and the local bricklayers' union and hod carriers union. This exhibit was the outstanding feature of the exposition, and was complete in all its appointments, from burned clay roofing tile, copper down spouts, millwork, painting, window shades, and drapes, flowers, shrubbery and landscape work to the green canvas in lieu of grass. The house was faced with Hy-Tex Saravan Chinchillas manufactured by the Hydraulic-Press Brick Co.

LOUISVILLE PRICES WILL NOT DROP

Louisville brick and clay products manufacturers claim that there is no chance of any further reductions in prices this season, as advanced fuel prices coupled with good demand for clay products will keep prices up. Coal that could be had at $1.50 a ton at the mine a few weeks ago, as a result of the national coal miners strike, has advanced to $3 and $3.50 a ton at the mine, and was $3.75 in the non-union fields. There has been a slump in prices since mid-May, as a result of Washington conferences on prices, and as a result of reduced freight rates effective July 1, which will hold back shipping of other than emergency fuel.

Brick manufacturers are having no trouble in securing supplies of fuel, but are having to pay the price in order to secure supplies. Reductions in brick prices are therefore not likely.

STIMULATE "OWN YOUR HOME" MOVEMENT

To stimulate the "own your home" movement, delegates of the Kentucky League of Building Associations, who held a convention in Covington, Ky., May 15 and 16, adopted a resolution authorizing the board of directors to organize at least 50 building and loan associations in unorganized cities and towns thruout the state. Gustav Flexner of Louisville in urging this resolution declared: "Such action will mean the enlistment of $25,000,000 to aid homeseekers, and incidentally provide work for many persons who are now unemployed. The volume of business will be increased, property valuations will be increased and bank and building and loan associations will flourish."

FARMERS NOT IN DRAIN TILE MARKET

Operations at the plant of the North Star (Mich.) Tile Co. were continued thruout the winter. Brick is the chief product made, the drain tile business being slow, due mainly to high freight rates and the low prices of farm products, preventing the farmer from entering the market.

BRIGGS CO. OPERATING TO CAPACITY

Full production is being maintained by the Briggs Co., of Lansing, Mich., which is turning out 40,000 face brick daily. There is a large volume of building in sight this season in Michigan, especially public buildings, and the Briggs Co. has enough business lined up to keep the plant running to capacity for weeks to come. 50 men are being employed.

MICHIGAN PLANTS RUNNING FULL TIME

Clay products plants in the Grand Ledge, Mich., district are running full time, and have more orders than can be supplied. The Briggs Co., of Lansing, is turning out about 40,000 brick per day. The American Vitrified Products Co. reports marked revival of business tho the demand for its products is still slightly below normal. The Grand Ledge Products Co. is doing a lively business.

ADDS KILN TO BATTERY

The Bentler Brick & Tile Works of St. Cloud, Minn., has added to its battery of kilns a 30-foot round down-draft kiln, which increases the capacity of the plant. This company recently traded a Ford motor for a gas engine which is being used to pump water from the pit.

FIRE BRICK PLANTS MORE ACTIVE

Reports received from various sections of Missouri show that fire brick plants of the state are operating almost at full capacity and that business is better than it has been for some time. This is due in a large measure to the fact that the clay plants are not short of fuel due to the coal strike. In most of the

A Faster Delivery At Less Cost!

Deliveries: One of the most important problems the modern Clay Plant Operator has to contend with.

The Fontaine System means a saving of time and in labor, and the delivery of your brick in perfect condition.

Easily attached on any size of truck.

Ask for details

The American Truck Body Company
Martinsville, Va.

NEW YORK BELTING & PACKING CO.
FOUNDED 1846
INCORPORATED 1856

RUBBER GOODS
for the Clay Industry

Test Special Rubber Belting
Indestructible Conveyor Belting
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Firo Superheat Sheet Packing
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Cobbs Piston Packing
Steam Hose
Water Hose
Pump Valves

New York Boston Chicago
Philadelphia Pittsburgh
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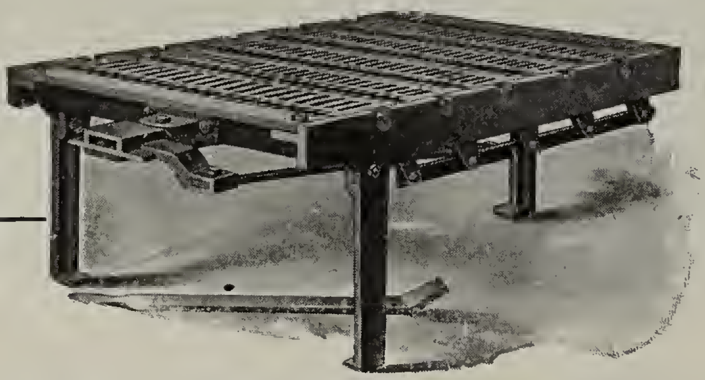
ELIMINATION OF LOSSES DUE TO KILN GRATE TROUBLES, is the result when CANTON GRATES ARE INSTALLED

Canton Grates will save you about one-fourth on your fuel bills. They will enable your operators to attain and maintain temperatures without excess use of fuel.

It won't cost you to get complete information today and it may mean profit for you. It has to many others.

Write us



The Canton Grate Co.

1709 Dillon Place, CANTON, O.

The Minter System

Columbus, Georgia

WHAT WE DO

BUILD COMPLETE PLANTS OR ANY PART

Nine of our Kilns will produce as much as 15 Kilns burned periodically—any product—any fuel. **Saving first cost of six Kilns.**

Ten of Our Recirculation Drier Tunnels

will dry as much as fifteen old line tunnels. All ware dried evenly without strains. No loss, wrecks or other delays. **Saving first cost of 6 tunnels and equipment.**

Kilns and Drier can be adjusted to the highest speed that any material will stand. What could do more?

DON'T BUILD BEFORE YOU KNOW

The Minter System Plants are Producing the Cheapest Building Material made in America today.

The Minter System
Home Office
Flint River Brick Co.,
Albany, Georgia

Engineering Dept. and
Branch Office
922 Broad Street,
Columbus, Georgia

cities where the plants are located the miners have unions independent of the national organizations and they operate under local agreements, which are usually entered into in August and last for a year. In several places, including Fulton, the clay factories own their mines and in that way are able to get their fuel, besides making purchases from other mines. In several places the factories are using so much coal that coal mines are operated at full capacity.

HAS ORDER FOR 5,000,000 BRICK

Shut-downs on account of bad weather will no longer interfere with operations at the plant of the Harrisonville (Mo.) Brick & Tile Co., which has just added two clay storage sheds. One of these is for raw shale, and the other for pulverized shale, and either one of the storage rooms will hold enough material to run the plant a month. This plant has been running continuously the past year, except for days when water filled the shale pit, and the entire output of the plant has been shipped as soon as manufactured. The company shipped 1,500,000 face and common brick during April, and has orders on its books totaling 5,000,000 brick. 70 men are employed.

DICKEY BUYS ANOTHER NEWSPAPER

Walter S. Dickey, president of the W. S. Dickey Clay Mfg. Co., Kansas City, Mo., has purchased the Kansas City Post from the Bonfils and Tammen interests. Mr. Dickey bought the Kansas City Journal, a morning newspaper, a year ago. The acquisition of the Post gives him a morning, evening, and Sunday service.

This company recently announced that it will donate a 12x136 foot Dickey vitrified salt glazed hollow tile silo complete with tile roof and chute as a capital prize to be awarded to the owner of the cow winning the dairy cow race at the Missouri State Fair in this city August 19 to 26. The cow race is a production contest between Jerseys and Holsteins and is held during fair week.

GREEN ENTERTAINS 500 BUSINESS MEN

500 North St. Louis business men and their families visited the plant of the A. P. Green Fire Brick Co. in Mexico, Mo., May 17, in connection with their annual excursion into Missouri, Mexico being decided as the place of their destination this time.

Cooperating with the United States Geological Survey and the Missouri Geological Survey, the A. P. Green Fire Brick Co. is making an effort to ascertain the resources of Audrain County in regard to fire clay deposits. Both the state and federal governments are gathering statistics in Missouri regarding the clay deposits and are enlisting the aid of the fire brick companies in getting these returns. The Green company officials have asked residents of Audrain to report all outcropping of fire clay along streams and places where the clay has been encountered in digging wells and coal mines.

SAYRE & FISHER SETTLE STRIKE

The strike at the Sayre & Fisher brick plant at Sayreville, N. J., has been settled thru acceptance of a ten per cent. increase in wages by the men. The plant is again operating on a full time basis. This settlement represents a compromise between the company and its men, since a 30 per cent. increase was demanded, which would have brought the wages up to February, 1921, levels. The present increase takes them back to the position of September, 1921.

NEW YORK ASSOCIATION BUYING MANY PLANTS

The Associated Builders of Kings County, N. Y., are negotiating for the purchase of several brickplants in Connecticut and Massachusetts, which they will operate to supply the brick they require to conduct their operations. This action is being taken because of the brick shortage in New York, which is tying up many projects in course of construction. The purchase will represent a capital outlay of two and one-half million dollars.

BUILDS NEW KILN

A new kiln with a capacity of approximately 300,000 brick has been constructed by the Patton (Pa.) Clay Manufacturing Co. The kiln is of the rectangular type and measures 130 feet long by 18 feet wide.

INCREASES BIN CAPACITY 500%

Improvements of various nature have been made by the Federal Refractories Co. of Alexandria, Pa., this year. Among others the company has increased its bin capacity 500 per cent.—from 150 to 750 tons.

KICKS MULE OFF PLANT

The Perry Manufacturing Co., Perryopolis, Pa., has installed a gasoline locomotive in the shale pit to replace the old-fashioned mule. This addition will greatly facilitate pit operations. J. C. Wilson is superintendent of this plant.

INSTALLS NEW EQUIPMENT

The Auburn (Pa.) Shale Brick Co. has installed a new brick machine and a new rotary automatic cutting machine at its Gettysburg plant. According to Thomas B. Dreher, this company has also rebuilt one kiln and another is in process of construction.

CUTS DOWN WHEELING LABOR

A brick loader has been installed at the plant of the Dunn Brick Works at Erie, Pa., which does away with a considerable amount of the wheeling by hand formerly done. Another improvement made on this plant recently is the putting into operation of a waste conveyor from the brick machine. This equipment also is the means of saving considerable labor.

ELECTRIFIES CLAY PLANT

Another conversion to electric power was effected recently when the Pittsburgh (Pa.) Clay Products Co. replaced its steam power and electrified the plant. This is just another indication of the increasing popularity of electric motors in favor of other forms of power. Thomas E. Wilson is treasurer of this company, which has its offices at 1303 Keenan Building.

REFRACTORIES COMPANY TO EXPAND

The General Refractories Co., Oliver Building, Pittsburgh, Pa., has negotiations under way for the purchase of the plant of the Pennsylvania Fire Brick Co., Beech Creek, near Lock Haven, Pa. The latter company has called an early meeting of stockholders to arrange for the sale, and it is said that the purchasing company has offered $191 a share for the stock. The new owner contemplates a number of improvements in the plant, and proposes to continue operations at regular capacity.

The General Refractories Co. is probably the second largest producer of fire brick in the country and operates ten plants in various parts of the U. S. Governor Sproul of Pennsylvania is president of the company.

PLANNING TO DOUBLE CAPACITY

According to E. A. Stewart, manager of the Stark Brick Co. of Canton, Ohio, this company is making plans to double its

Dryer, Transfer and Clay Cars, with Flexible Bearings. Switches, Turntables and Track.

THE CHASE FOUNDRY & MFG. CO.
COLUMBUS, OHIO

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WOULD YOU LIKE TO MAKE BETTER BRICK ?

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In addition to the long life of the Cypress—the logical tank wood since it grows in water—Caldwell tanks have the lasting qualities that can be built in only by long-experienced tank builders.

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Let us prove the benefit we can be to you. Ask for complete information today.

We also manufacture a complete line of stacks, tanks and other steel plate work of high quality.

Inquire today.

DUFF PATENTS COMPANY
INC.
Frick Building Pittsburgh, Pa.

capacity. With the present greatly increased demand, the market should be able to absorb this increased output.

WORK OVERTIME TO SUPPLY DEMAND

Marked improvement in the clay products industry in the Akron district is reported by officials of the Robinson Clay Products Co. Officials of the company declared that every plant of the concern is operating at capacity and that the various units have been so busy since April 1, that repairs are being made without suspension of operations.

Demand for sewer pipe and fireproofing has increased during the past two months to such an extent that some of the plants have been compelled to operate overtime.

"The future looks most encouraging," an official of the company said recently. "Prices are lower now than at any time since 1916, and deliveries are slightly behind schedule," he declared.

Other clayworking plants in the Akron district are operating at top speed and unfilled orders in most instances will insure steady operation until late in the summer. Construction work in many Ohio cities has aided the industry considerably.

ATTRACTIVE BOOTH AT SOUTHERN SHOW

An excellent exhibit was staged by the Columbia (S. C.) Clay Co. at the 1922 annual Palmafesta of Columbia. The illustration shows the booth of the company. Mingled shades of "Rubytex" mat face shale brick were used in building up this exhibit. The company manufactures hollow tile, face brick and other clay products.

Display of Columbia (S. C.) Clay Co. at the Annual Palmafesta in Columbia.

WANT HIGHER CLAY PRODUCTS RATES

Hearings on building material and brick and clay products freight rates to and from South Dakota have been set for June 14 and 30, respectively, at Washington. The railroads are attempting to secure increases on building materials from points in Illinois, Missouri, Wisconsin and Minnesota to South Dakota points, while the state board of railroad commissioners is working for reductions. In the brick and clay products case the South Dakota board wishes to secure reduced rates from Iowa points to all stations in that state. The state board will present arguments in both cases.

CHANGES FROM END TO SIDE CUT

R. W. Payne & Sons, manufacturers of brick at Drakes Branch, Va., have replaced the end cutting machine at their plant with a side cutter, and common brick are being manufactured at this plant.

FURNISH HOLLOW TILE FOR BASEMENTS

The American Fire Brick Co., of Spokane, Wash., reports a large demand for hollow tile. E. R. Conley, sales manager, reports that much is being ordered for use in basement walls for residences. This company is furnishing hollow tile for the electrical home being built by the Electrical Service League. They are also furnishing hollow tile for a number of houses being constructed by the Mahon Construction Co.

TORONTO CERAMIC COURSE ASSURED

Prospects are bright for the establishment almost immediately of a course in ceramics at Toronto University. For the past few months President Ryland New, of the Canadian National Clay Products Association, and William Burgess, chairman of the Technical Education Committee, have been busily engaged in a scheme to have this course started. Meetings of the Technical Education Committee have been held with officials of the Canadian Manufacturers' Association to interest this association in the course. As a result there was a big meeting at the offices of the C. M. A. on May 12, to consider the question. In addition to clay products manufacturers there were present representatives of the enamel-ware and glass manufacturers and the steel industry. Talks were given by H. F. Dingledine, a graduate of Ohio State University now with the National Fire Proofing Co., Ltd., at Aldershot; William Burgess, superintendent of the Don Valley Brick Works, Toronto; General Mitchell, dean of the Department of Applied Science at Toronto University, and representative of the other industries involved. All spoke favorably of the scheme and a committee was appointed to further plans to have the course established. This committee included Ryland H. New, Gilbert E. Armstrong, A. Dods, T. H. Graham, J. S. McCannell and a representative from each of the other industries.

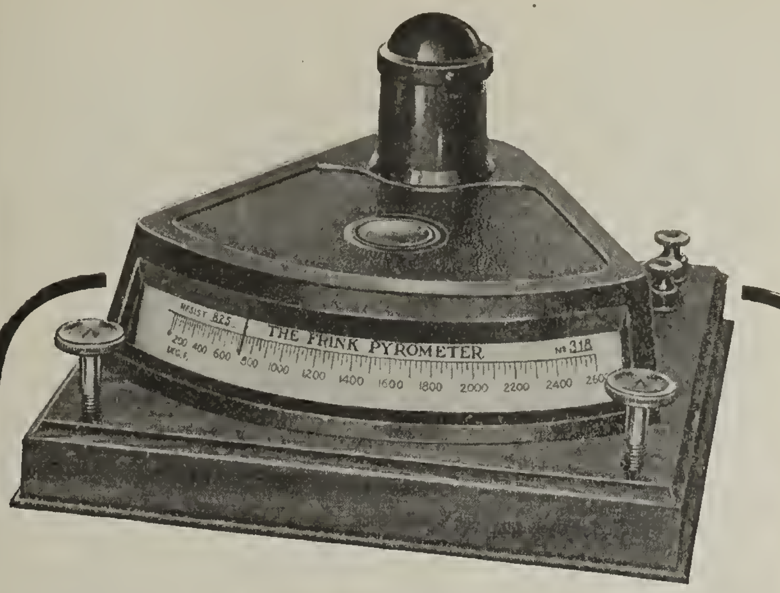
Those attending the meeting from the clay products industry were: R. H. New, Hamilton; C. H. Wallace, Toronto; A. Wehlann, Cairo; W. McCredie, Belmont; T. H. Graham, Inglewood; W. J. Nicholson, Toronto; H. F. Dingledine, Aldershot; T. Kennedy, Swansea; Wm. Burgess, Todmorden; G. C. Keith, Toronto; J. S. McCannell, Milton; G. E. Armstrong, Fletcher; D. S. Graham, Inglewood; A. Dods, Mimico; M. F. Gibson, Toronto; C. S. Parker, London; S. R. Walsh, Toronto.

CANADIAN BRICK BUSINESS CONDITIONS

Conditions in the brick business as they exist with my companies, have been very unusual.

Early in March of the present year a distinct improvement in the demand occurred, especially for residential work in Toronto and vicinity as well as some of the Western Ontario cities. The consequence has been a marked shortage, especially of common brick, during the past couple of months. This increase in demand is no doubt accounted for by the fact that mortgage money has been easier to obtain and many houses are being erected to fill the long felt shortage. It seems unfortunate whenever there is a little more than the normal demand for brick that it is impossible to get anything like prompt deliveries, but on the other hand, if it were possible to get prompt deliveries of brick it would be impossible to get sufficient bricklayers as there are not enough bricklayers in Toronto to satisfy what should be even normal demand. Brick is such bulky material and so expensive to handle and store that from an economic point of view it is not possible to successfully operate a plant which is big enough to cope with an abnormal demand for brick and at the same time pay its way during seasons or perhaps years when the demand is not brisk.

The brick-making industry is one industry at least which has never taken advantage of the tariff. Brick of practically all classes in Canada is being sold for a lower price at the plant than similar material is being sold for at the shipping



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Locomotives
They will serve you well
and do it economically.

Any gauge—2 to 8 Ton capacities

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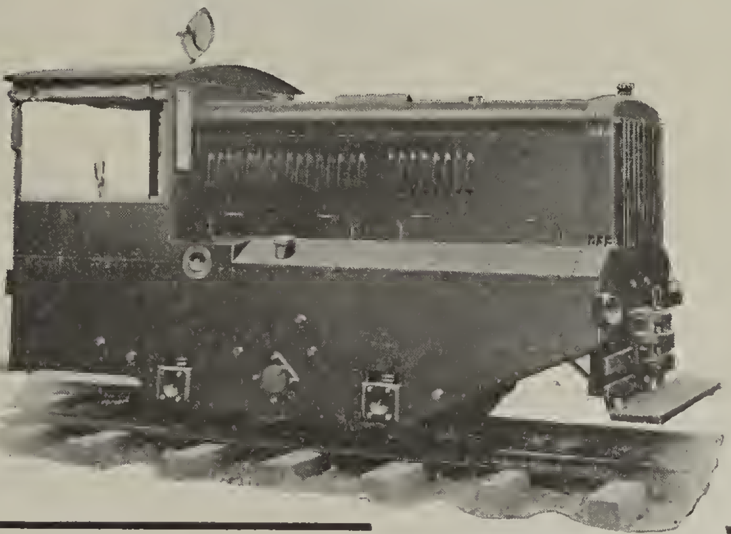

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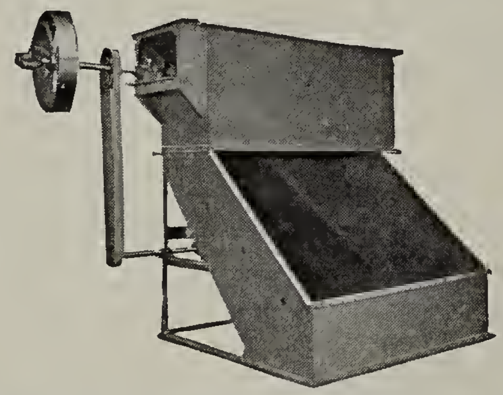

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This arrangement makes possible low initial investment and low operating cost by combining a correctly designed screen with the simplest possible vibrating mechanism, belt driven from elevator shaft.

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Dryer Cars and Clay Working Equipment
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point in the United States, and these United States plants very often have the advantage of either mining their own fuel or obtaining it locally with little or no freight expense. At the same time Canadian brick is about ten per cent. larger than the brick of United States manufacture, so that from the users' point of view, brick can be obtained on a very economical basis in this country.

Unfortunately, very little relief has been given in regard to freight rates, which are undoubtedly excessive as applied to brick in comparison with pre-war rates of brick as compared with other materials. It is to be hoped that our present government will take some action to relieve this situation, as undoubtedly more equitable freight rates would stimulate the building industry thruout the country.—*J. B. McFarren, Interprovincial Brick Co., of Canada, Ldt., in the Contract Record.*

OUTLOOK FOR VITRIFIED CLAY

The outlook for the vitrified clay industries for the year 1922 is somewhat difficult to determine. With the increased activity in building construction there is sure to be a demand for the smaller sizes of sewer pipe and for wall coping and flue linings. The fire insurance underwriters' strongly endorse the adoption of this form of building construction and many municipal authorities have made it compulsory by their building by-laws. Some indications of the loss is afforded by a recent statement of the National Board of Fire Underwriters' of the United States that 36 per cent. of the total loss by fire within the States during the five years just past can be attributed to defective flues and chimneys. While no such definite figures can be given for Canada, yet when it is remembered that Canada has the largest capita loss of any nation in the world, it is doubtful if the proportion in the Dominion is any less.

The outlook for increased demand for sewer pipes for municipal works is somewhat uncertain. There has been a tendency by municipal authorities to utilize the construction of sewers as a means of affording relief work to the unemployed. This tends to keep back the construction of sewers during the best working months of the year and increases the tendency of municipal authorities to do this work by day labor instead of by contract. The effect on the production industries is that orders are placed in smaller quantities, and it is very difficult for the factories to anticipate requirements so that exceptionally heavy stocks have to be carried.

There is a steady demand for sewer pipe and drain tile arising out of the extensive highway improvements that are taking place thruout the province of Ontario, and the paving of streets within municipal boundaries. It is now generally recognized that drainage is the prime essential to secure a satisfactory and permanent roadbed, and that vitrified clay pipe is the ideal material. Many state highway authorities in the United States are using second quality sewer pipe exclusively for underdrainage work.

With the greatly increased building construction now going on in the outskirts of all the large towns in Ontario it is confidently expected that very soon there will be a demand for extensive construction of sewers and that as the general unemployment situation improves sewer construction will be again undertaken by contract and at lower prices than have prevailed in the past few years.

In the Maritime provinces development has been checked by unsettled labor conditions and the unrest in the coal mining areas. In the west no great development in municipal work is expected for some time. The activity in the building industries will however, provide a steady if limited output until financial conditions improve with the influx of a new population.

Prices of manufactured goods have fallen but are still kept up by the high freight rates on coal and clay and the unfinished products. Labor has not been difficult to secure and has been fairly well employed thruout the year, but it is not expected that there will be any great expansion in the industries during 1922, altho it is believed that with the general turn to more prosperous times the outlook is brighter than it has been for many years.—*A. G. Dalzell, Vitrified Clay Pipe Publicity Bureau of Canada, in Contract Record.*

⁂

THE BUILDING SITUATION

(*Continued from page* 918)

different yards are operating close to the 1921 figure, or just about as high as fuel and labor will permit. While workers at the yards are receiving from $3.50 to $4.25 a day, there is an undercurrent of dissatisfaction and rumors of a dollar a day more being asked at an early date.

Operations Forge Ahead in New Jersey

Building operations at Newark, N. J., during May reached a total of $3,258,400, or an increase of $1,060,000 as compared with the corresponding month of a year ago. June has opened with the same encouraging aspects, and a still greater volume of work is expected in this month. For the first five months of the year, construction in that city has totaled $11,430,000, as compared with $6,589,000 in the same period of 1921, an increase of $4,841,000.

The Raritan River section is recording some big advances in construction, with dwelling work the predominating factor. Improved conditions now prevail at the local industries, including a number of brick plants, due to a settlement of the recent strike of workers. Men at the brick yard of Henry Maurer & Son, Perth Amboy, have been advanced 2½ cents an hour.

Heavy Construction at Philadelphia

The month of May at Philadelphia, Pa., rounded out a total of $8,872,000 for all classes of building construction, an increase of $5,312,000 over the corresponding period of last year. The first five months of 1922 show an aggregate of $39,238,425, or an advance of no less than $27,208,810 over the record for the same months of a year ago. Of the amount noted for the present year, more than $19,000,000 has been invested in new dwellings, by far the majority of brick, and representing close to 4,000 homes. In 1921, these same months produced but 946 homes, with valuation of $4,660,500.

Central Pennsylvania is showing marked advances in building operations. Thruout the Harrisburg district there is a wave of house construction, and many millions are being invested in this line. Heavy call is being made on the brick plants in the Hazelton, Wilkes-Barre and Wyoming Valley districts for material for current account.

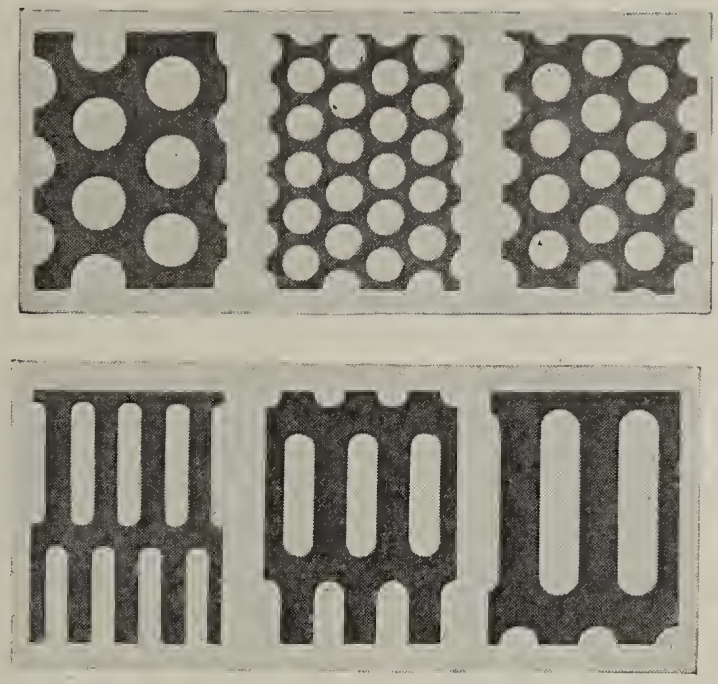
Operations Increase at Baltimore

Official figures from the building department at Baltimore, Md., show an increase in construction in May of $1,258,920 over the totals for the month preceding. The grand total for the May period reached $3,256,320, with two-story brick dwellings taking the lead over all other class of construction. Hollow tile garages, also, occupy a prominent position in the list of structures, and many thousands of dollars are being diverted to this channel.

Cleveland Making Up For Late Start

Big increase in building activity in the Cleveland districts indicates that 1922 will be the largest building year in the history of the community. Every brick, tile and building supply manufacturer or distributor in the district is rushed to capacity to meet demands of builders who were waiting for the labor situa-

Perforated Steel Screens



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National prestige throws an obligation upon a manufacturer, for a good reputation, once established in the eyes of the public, must be constantly and assuredly maintained. We are ever mindful of this obligation and also of the fact that dependent upon valves are convenience, fuel economy, and safety.

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We are prepared to furnish you with the highest quality of DOMESTIC MANGANESE which is the BEST for the coloring of your clay products, and the supply is not subject to the uncertainties of importing.

We mine and very carefully prepare all of our own product and therefore guarantee that each shipment will be the same.

You can always duplicate your shades from our MANGANESE by using our MANGANESE.

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DIESEL ENGINES
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Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal types furnished.

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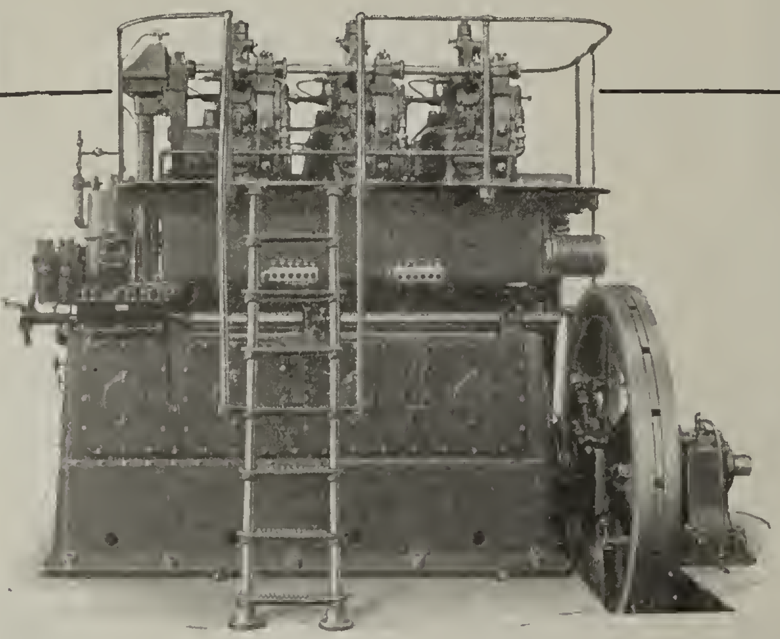
Formerly the American Clay Machy. Co.



tion to go ahead. During May construction work has jumped $4,000,000 ahead of May, 1921. Tho the year so far is $6,000,000 behind the same period a year ago, so many new and large products are contemplated, particularly in housing, that this loss is expected to be offset before the building year ends. Four separate enterprises, in different sections of the Cleveland district, all in housing and apartment work, will total close to $3,000,000. Size of brick construction is shown by eight projects, started in May, totaling $390,000, against 17 jobs totaling $536,000 for the same month in 1921.

The labor situation is improving steadily. To forestall stoppage of work, demands of bricklayers for $1.25 have been met, as well as demands of other trades for higher wages than were paid in peak or war times. Agreements in this connection may be said to be between contractors and labor, rather than as representative of the scale, which remains at the 1921 level.

Columbus Building Reaches Large Totals

The building boom which has resulted in the erection of a record number of dwellings in Columbus, Ohio, this spring, still continues. According to the report of the Columbus building department a total of 682 permits were issued during May for structures estimated to cost $1,578,800 as compared with 506 permits and a valuation of $1,307,760 in May of last year. Since the first of the year the department has issued 2,489 permits having a valuation of $6,415,100 as compared with 2,078 permits and a valuation of $4,174,830 during the corresponding period in 1921. So far this year permits have been issued for 773 dwellings while only 426 were licensed in the corresponding period in 1921. During May 202 permits for dwellings were issued.

Chicago's May Building Breaks Records

Chicago's answer to terrorism, threatened strikes and molestations by certain elements in the building trades is contained in the May building report issued from the commissioner's office. All home building records in the Chicago building department were broken in May. Permits for 2,753 new homes—2,118 flats and 635 residences—were taken out. For the first five months of the year, permits for the construction of 11,035 new homes have been granted, 8,502 of these were for flats and 2,533 for residences. The value of building to be constructed under the May permits exceeds that of the previous month by $10,000,000, and is more than nine times as great as for the same month last year.

Following is a table showing permits issued in May, 1921, April, 1922, and May, 1922:

	May, 1921.	April, 1922.	May, 1922
Residences	259	701	635
Apartments	95	377	371
Industrial	61	153	175
Others	13	84	92
Total	428	1,315	1,273
Value	$2,967,750	$17,076,560	$27,029,650
Frontage	11,076	38,077	39,331

Northwest Buildings Gain 37 Per Cent.

May building contracts in Minnesota, the Dakotas and northern Michigan amounted to $10,913,000, the largest monthly total since April, 1920. The increase over April, 1922, was 37 per cent., and over May, 1921, 45 per cent.

During the first five months of this year, construction has been started to the amount of $36,907,000, or 22 per cent. more than last year.

Last month's figures included: $3,864,000, or 35 per cent., for residential buildings; $3,704,000, or 34 per cent., for public works and utilities, and $1,978,000, or 18 per cent., for educational buildings.

In May there was reported contemplated new work to the amount of $15,773,000.

Tremendous Building in South

The value of construction contracts awarded in the 16 Southern states, covered by the Manufacturer's Record's survey, for the first five months of this year reaches a total of over $208,000,000. This compares with $330,000,000 for the entire year of 1921. For the first five months of 1921 building totals reached only $104,339,000. Contracts let during May, 1922, were more than 2½ times as great as for May, 1921.

The following two tables show contracts awarded and contracts to be awarded the first five months of 1921 and 1922 in the 16 Southern states:

Contracts Awarded

	1921.	1922.
May	$ 22,630,100	$ 58,338,434
April	33,889,346	52,992,960
March	25,361,577	40,617,831
February	14,350,944	35,774,174
January	8,107,757	21,143,479
TOTAL—First five months	$104,339,724	$208,866,878

Contracts to Be Awarded

	1921.	1922.
May	$ 84,752,130	$ 81,176,960
April	136,979,131	89,697,397
March	87,916,333	123,488,397
February	30,920,254	91,379,657
January	21,209,800	64,720,995
TOTAL—First five months	$361,777,648	$450,463,406

Machinery and Equipment

Devices and Methods, New and Old Concerning Which Information of Interest to the Clay Manufacturer is Published

OPERATING EFFICIENT COAL UNLOADER

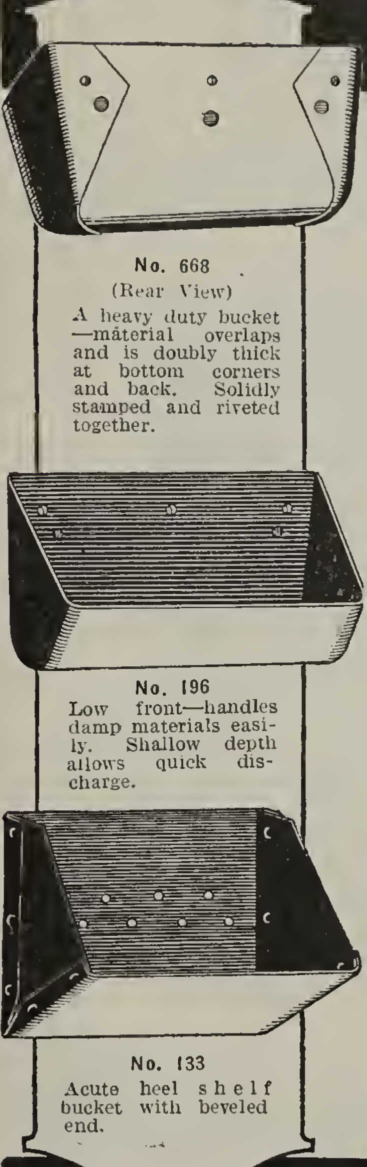
One of the many ways in which the Streator (Ill.) Brick Co. reduces the hand labor item in its costs is thru a very efficient coal unloader. E. F. Plumb says of this equipment:

"It is the common type of chain mounted, elevator bucket unloader operating from a track pit. It is absolutely necessary to have trap bottom coal car equipment of some sort deliver the coal to the plant. When high hopper cars are furnished where all the coal slides without shoveling this coal unloader will handle approximately 50 tons per hour with the attention of only one man.

"Requirements of our company are approximately 40 tons per day. Coal is transported from the hopper to the kilns by means of a horse and cart. We furnish the horse and cart and pay the man who operates it 25 cents per ton for hauling when he shovels the coal from the ground or the car into his cart and nine cents when he dumps it from the hopper into his cart. Therefore the coal unloading equipment saves on this item 16 cents per ton. For the normal requirements of the company this would amount to $6.40 per day.

"Against this, of course, must be charged the interest, depreciation, maintenance and operating expenses of the unloading equipment. We figured this roughly at $2 per day.

"The same equipment could handle considerably greater



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A heavy duty bucket —material overlaps and is doubly thick at bottom corners and back. Solidly stamped and riveted together.

No. 196
Low front—handles damp materials easily. Shallow depth allows quick discharge.

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Acute heel shelf bucket with beveled end.

SALEM
ELEVATOR BUCKETS.

A size—a type of bucket for every use in stock for prompt delivery. Special buckets quickly made to order.

Salem buckets have been leaders in the field for half a century. Used everywhere.

Send for price list.

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Always Gives the Same Satisfaction!

The one-man excavator is highly adaptable for the average plant of twenty-five thousand to one hundred thousand brick per day. It will do the work of ten or a dozen laborers for less than the daily wage of three of them. It will work in any weather.

The one-man excavator insures a saving to every user. It can be furnished with Gasoline or electric power, with truck or caterpillar tread. The purchase price is low.

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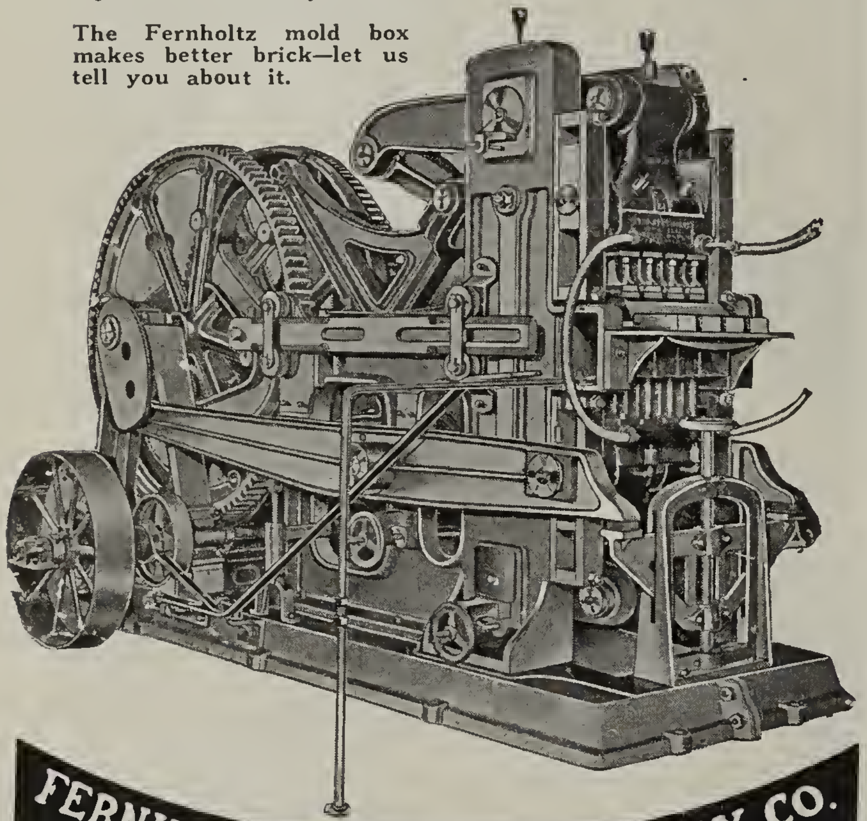
Better Brick With Real Economy

The Fernholtz Brick Press is constructed to manufacture better brick with little cost. The machinery construction is such that all parts are readily and easily accessible and repairs can be easily made.

The Fernholtz mold box makes better brick—let us tell you about it.



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"Mittler" and "Meco" Brand Brick and Tile Cutting Wires are best and cheapest, made of high grade music wire on automatic machines. Any gauge, any length and any size loops to suit any cutting table. No orders filled for less than the price of 1,000 wires.

Send sample and secure prices.

Soldered Wrap Lock Twist Double Twist

State style of wire preferred.

The Manufacturers Equipment Company
DAYTON, OHIO, U. S. A.

tonnage than the Streator Brick Co. handles in which case the saving would be correspondingly greater. One of the main advantages is, of course, during times of labor shortage, when it is very hard to get men to shovel coal out of cars as it is a hard, dirty job."

* * *

ERIE ANNOUNCES IMPROVED SHOVEL

The redesigning of the new 20-ton "B" Erie shovel, the 1922-23 machine, has just been completed by the Erie Steam Shovel Co. and the company has begun to ship the new machine in place of the 1921 "B" Erie.

In the designing of the new machine were retained all of the good features of the 1920-21 Erie shovel. The object has been to provide extra protection against accident and abuse at every point—and to accomplish this some shafts have been increased in size, even tho already heavy for the service intended.

The company claims for its new machine more power than previously found on steam shovels in the 20-ton class—hoisting power enough to handle a full size ¾ cu. yd. dipper (water measure) even with a 21-foot boom and 18-foot 6-inch dipper handle. Improvements in the trucks are many, and include a reinforced truck frame of stronger design than ever before used; heavier propelling shaft, with ample strength to stand very severe abuse. Split collars are provided on the rear axle, for throwing the propelling gears on a traction wheel shovel out of mesh in a few minutes' time, so that the shovel can be towed behind a motor truck at a speed of three to four miles per hour. The traction wheel mounting is interchangeable either with car wheels or with the Erie's lubricated caterpillar type mounting.

The turntable casting has been reinforced with flanged webs for greater strength, and—another entirely new feature—has guards to keep water off the cone-roller path so that this path remains absolutely dry and the rollers do not slide. The cone-rollers themselves are of a harder and tougher steel than has ever been used for this purpose.

New features of the operating mechanism include a new boom hoist design which provides instant accessibility for the hoisting engine crank shaft bearing; the worm gears of the boom hoist running in oil. The hoisting engine crank shaft is heavier, making the engines run smoother and for a longer time without adjustment. There is also a new and better three-feed oil pump for positive lubrication of the hoisting, swinging, and crowding engines.

Another of the improvements on the new Erie is the new design of the main swinging shaft bearing, by means of which the bushings can be easily renewed in a few minutes, by the insertion of interchangeable bushings of a special bronze. Smoother operation at high speed has been assured by machine-cutting all gears on the hoisting, swinging, and crowding trains—even the bevel gear and pinion at the beginning of the swinging train being machine-cut instead of cast.

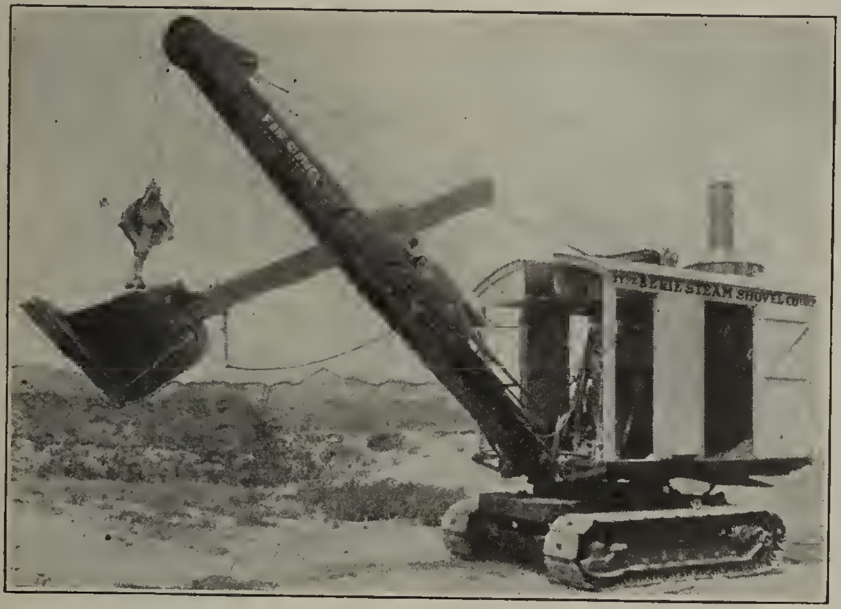
Improvements have been made in the boom to provide still greater strength in hard digging, the supporting lugs being placed outside of the boom, so as to compact instead of spread the boom members when the boom is subjected to twisting strains. The heavy steel shipper-shaft boxes on high lift machines are cast together, eliminating all chance of the boom '"spreading" even after years of service.

Another entirely new feature is the automatic tripping device. A drum turns with the shipper-shaft and keeps the trip rope taut, automatically winding and unwinding the trip rope as the dipper handle is moved in or out. There is no time lost overhauling rope in order to dump the dipper—the drum takes up all of the slack.

The dipper is provided with a double-hinged latch lever—a lever which moves freely from side to side and does not bend if it strikes a car or wagon, nor can it break wagon boxes nor car sides.

Many improvements have been made at the power-producing end of the new machines—notably a larger boiler, with steaming capacity up to the full limit of speediest shovel operation. To economize fuel, the new Erie shovel is equipped with an auxiliary exhaust—a feature which permits exhausting to the rear of the shovel instead of thru the stack, at times when the large boiler is providing ample steam and induced draft is not required. This feature is also of advantage when the shovel has been standing idle and water has accumulated in the engines, as this water can be blown out thru the auxiliary exhaust pipe instead of projected thru the stack.

The new "B" Erie can be quickly converted to a locomotive crane to handle a clamshell bucket, orangepeel or a dragline bucket; it is easily changed over to a steam hoe for trench excavation; or it can be readily equipped with triple-gage trucks for railroad ditching, and gravel, and so forth. The steam hoe is one of the most valuable new features, as it prevents cave-ins on trench work, by traveling over solid ground and digging from behind with a hoe motion.



The New 20-Ton Erie Shovel, Type "B."

The many improvements in the new machine, too numerous to give here in full, include improved fair leads for dragline service, greatly lengthening the life of the drag cable; also improved clamshell control to speed up the hoisting and closing action when a clamshell bucket is handled.

⁂

FIND COAL AND CLAY IN SAME DEPOSIT

A recent report from Shoals, Ind., states that some very fine coal land has been discovered there in a district which has excellent clay and shale on the same land with the coal, which would result in a fine combination for clay working interests.

The report states that the L. J. Stahley mines, operating a hillside mine, recently discovered a seven-foot vein of fine coal 30 feet lower than the one that was being worked. The mine is a quarter of a mile from the Baltimore & Ohio R. R., to which a side track is being laid. This is the farthest east that any coal has been found on the B. & O. lines in Indiana, and the deposit covers several hundred acres.

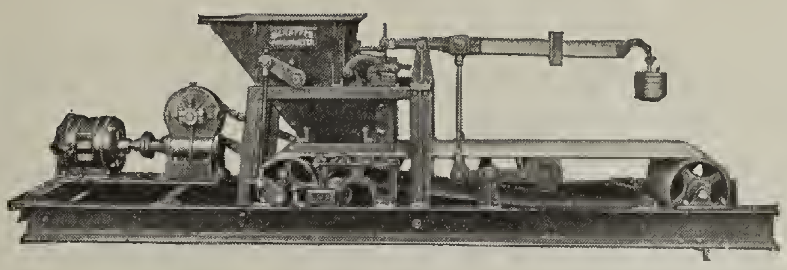
⁂

ENGLISH CONCERN REBUILDS PLANT

D. Whitehouse, manager of the London Brick Co. at Peterborough, England, informs us that this company has rebuilt its plant at Farcet near Peterborough, and now has a capacity of 500,000 brick weekly. Labor-saving devices have been used wherever possible in an effort to bring the costs down to a minimum.

OXIDATION OF CERAMIC WARES

It is planned at the Ceramic Experiment Station of the Bureau of Mines, Columbus, Ohio, in the investigation of



ACCURACY

Predetermination of quality in the mixing and tempering of your clay and 99.75 per cent accuracy in tempering and weighing soon amounts to real savings for the manufacturer.

The Poidometer eliminates waste and extra labor, eliminates cracked ware in the dryer, and will weigh your clay at any rate of speed (1½ pounds to 21,000 pounds per minute).

Ask about the Poidometer

SCHAFFER ENGINEERING and EQUIPMENT COMPANY
2828 Smallman Street Pittsburgh, Pa.

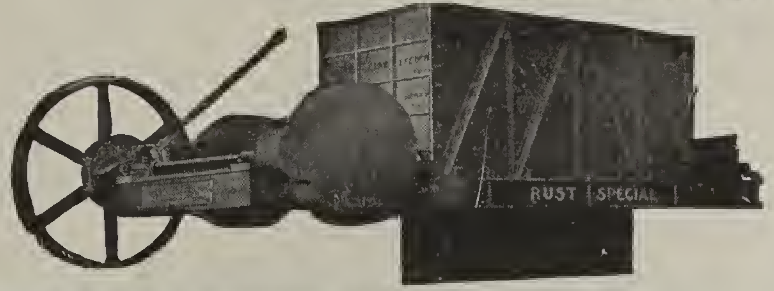
A Valuable Machine To Every Clay Man

The Marion Rust Special Feeder Mixer is a valuable machine to every clay man who considers perfect mix of his clay an essential feature to quality in the finished product.

The machine eliminates labor, speeds up efficiency and improves the quality of your ware.

May we send you our latest catalog?

MARION MACHINE FDY. & SUPPLY CO.
P. O. Box 395
Marion, Ind.



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And where can you find as satisfactory an article for elevating and conveying purposes as rubber belting?

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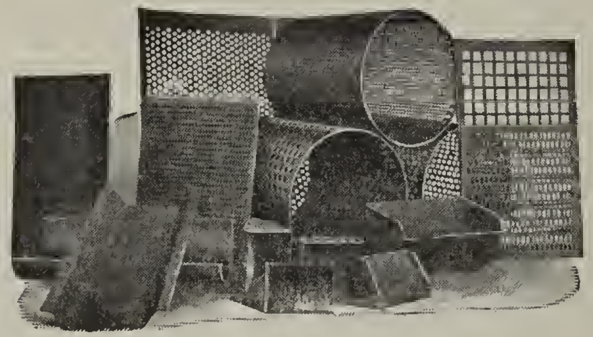

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the oxidation of ceramic wares during firing, to continue making measurements of the rate of evolution of H_2O, CO_2, SO_3, and SO_2 from clay bars (Lower Kittanning fire) in a combustion tube in a current of oxygen at various temperatures, atmospheres and typical clays. During the oxidation of "siderite" iron clays, siderite, magnetite and hematite are, at a certain stage of the burn all present at the same time.

POROSIMETER PROVES VERY HELPFUL

The porosimeter developed in the studies of the oxidation of ceramic wares during firing, being conducted at the Columbus, Ohio, station of the Bureau of Mines, has proved a great aid in the control of the latter part of the burn, more especially for paving block where a low porosity is essential. A preliminary survey of the relation between porosity, vitrification, and rattler test has been made.

SETTLING OF COMMERCIAL DISPUTES

Rules for international commercial arbitration to settle disputes arising between business men of different countries have just been approved in principle by the Council of the International Chamber of Commerce. In making this announcement the American Section of the International Chamber points out that commercial disputes will be settled more effectively and with less delay and expense under the rules than by litigation in courts of foreign countries.

SUSPECTED AS "LIQUOR CARRYING" BRICK

A professor in an eastern university, while touring the Orient, obtained a brick from the Great Wall of China and carried it back to America with him. Customs inspectors were suspicious, thinking that the brick contained either liquor or drugs, and it was drilled, sawed and tested in various ways until they were convinced that it was merely a brick and nothing more. However, the inspectors cannot be blamed, for the brick was different than we are accustomed to seeing in this country. It weighs about 23 pounds, and is made of white clay with a rough surface. It greatly resembles a concrete block.

A LITTLE INDIANA BRICK HISTORY

An interesting history is connected with the brick industry in Attica, Ind., which is today represented by a modern plant of the Poston Brick Co., established in 1907 by C. E. Poston, of Crawfordsville. It is not known in what year the first brick were made in Attica, but the first brick house in Fountain County was built from the brick manufactured on the site of the chautauqua pavilion. In 1834 Daniel Young made brick on his farm south of the city, and used the material for the large residence now on that property. Between 1865 and 1868 John Bell, a capable and honest business man, established a pretentious brick business near Elmdale, and a few years later erected a plant south of the town. Mr. Bell was also a contractor, and many buildings erected by him are in a good state of preservation today, indicating the excellence of the material from which the brick were made.

The Poston Brick Co. was the next and latest development of the industry in Attica. The plant operated for several years on a basis of three-fourths paving brick and one-fourth face brick, but paving brick has been discontinued, and at present the plant turns out about 50,000 face brick daily. The well-known "Poston Orientals" were the first rough surfaced brick to be made, and were originated by Mr. Poston, whose two sons, Floyd and Irvin, are associated with him in the business. Poston brick are shipped to the east coast, down to Texas, up to Minnesota and Canada. Chicago, Milwaukee and Indianapolis are also large markets.

Among Our Advertisers

Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

R. D. Nuttall Co., with offices located in Chicago, Pittsburgh and Philadelphia, have had fifteen years' experience in producing heat treated gears and other specialties by scientific methods and under the supervision of experienced metallurgists. You can be assured that orders sent them will be properly taken care of.

* * *

IMPORTANT CHANGE IN CUTTING TABLE WIRE BUSINESS

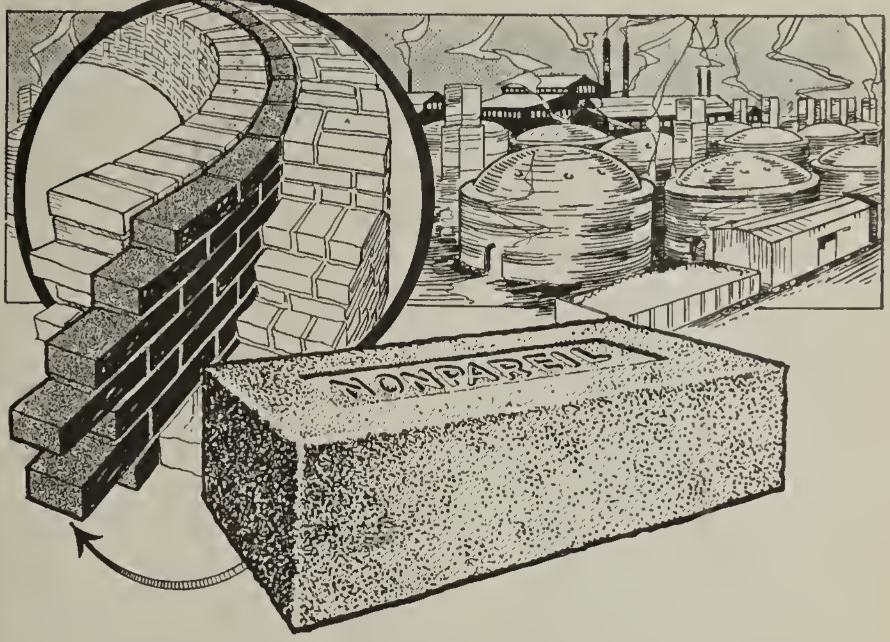
The Mittler Wire Mfg. Co., Robbins, Tenn., because of the death of Mr. P. Mittler, has been purchased by the Manufacturers Equipment Co., Dayton, Ohio, who have removed all the machinery, wire stock, and finished cutting wires to their factory in Dayton. Mr. Mittler was a mechanical genius of the first magnitude and his service to the industry was most highly appreciated. The automatic power machines used by him were the product of his own inventive brain and were completely made by the skill of his own hands. These machines are simply marvels of ingenuity and embrace almost every known mechanical movement and are really human in many of them.

These machines were designed and built without drawings and with but few tools. As the design of each separate part originated in his mind, it was immediately executed by the skill of his hands until the finished machine became a perfectly and synchronously moving mechanism producing the best and most perfect cutting wires the industry ever knew, and thus Mr. Mittler became a true benefactor in the great field of clayworking, though this fact he never knew. Fate has long decreed that living men should never know how the public mind was pleased to regard them. After death a memorial is erected to their deeds and memory or they are forgotten without prejudice.

The good and the service that was being done by Mr. Mittler shall live and continue as all these wonderful wire making machines are now in the factory of The Manufacturers Equipment Co., who will, to the limit of their ability and without stint, endeavor to give a better service to the industry than was formerly enjoyed. It shall be the continued aim of "Meco" to maintain the established high standard in cutting wires, and also supply the industry with them at prices commensurate with the cost of material, power and labor necessary for their production.

"Meco" will continue the use and operation of the semi-automatic wire making machines of their own design and make. These machines have in the past years furnished millions of cutting wires to the trade. The company anticipates that in

This Illustration Will Give the Reader Some Idea of the Productive Force of These Machines



Where Profits Come From

ALMOST invariably, profits come from lower costs—not higher prices. And almost invariably, lower costs are the result of saving some former waste; for example, the packing industry.

In the ceramic field, the saving of wasted fuel is a most effective means for reducing production cost. On the average, 25% of the heat of a kiln is lost by conduction and radiation from the walls and crown. About 2/3 of this waste can be saved by insulating the kiln with a single course of Nonpareil Insulating Brick, resulting in a net fuel economy of 10% and 15%.

Furthermore, the more uniform temperature made possible by Nonpareil Brick insulation affords additional saving by preventing over- and under-burning, thereby reducing the loss in defective ware.

The decrease in production cost due to insulating kilns with Nonpareil Brick is just that much more margin for profit—that much advantage in competition.

For some actual figures on how well it pays to insulate kilns, write for the 72-page book, "Nonpareil Insulating Brick." It will be sent free with a sample.

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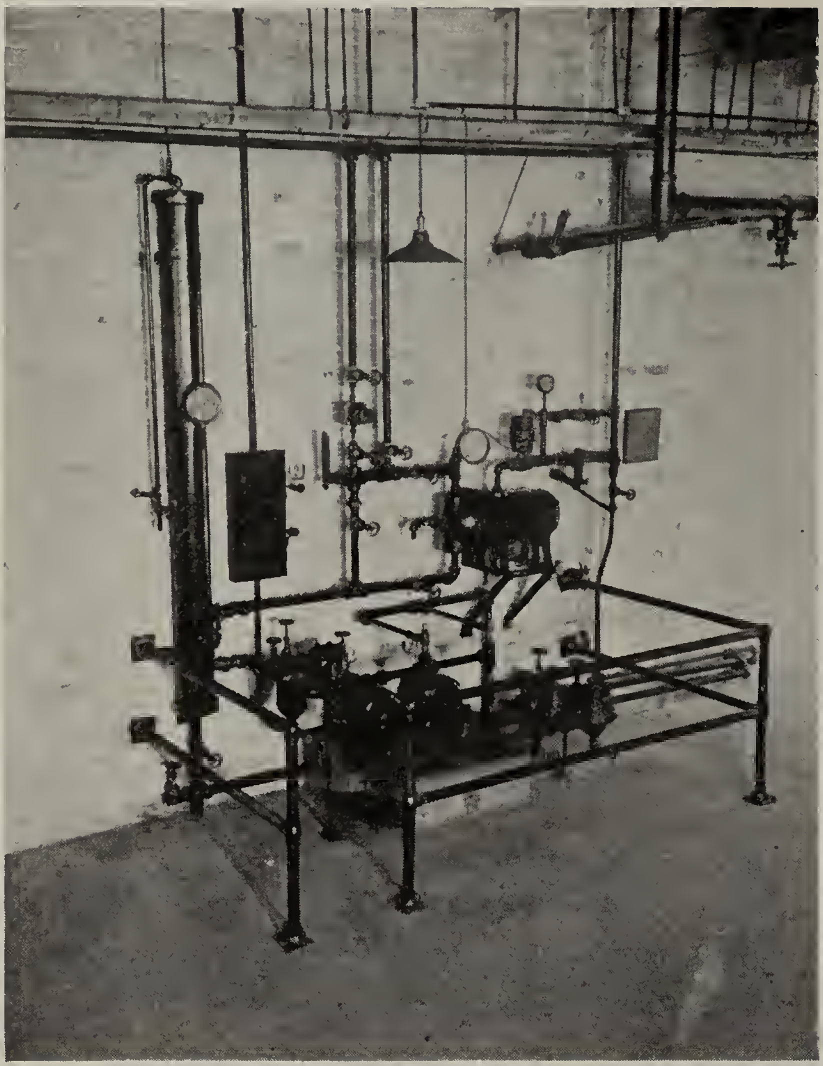
149 Twenty-fourth Street Pittsburgh, Pa.

Nonpareil Insulating Brick

For Kilns and Boiler Settings



The Present Business Situation Demands Better Quality Ware

Competition today demands the production of better ware at a low cost. Therefore one of the largest problems facing Face Brick Manufacturers today is the elimination of scum.

Coal contains sulphur which unites with the lime in clay and forms scum. Coal leaves an ash deposit on the ware which in many cases causes serious losses in the quality. Burn your ware with oil, Mr. Operator, eliminate the loss of time, labor and quality and improve the quality of your product. Produce more ware by speeding up each burn. Burn with oil the Hoppin Way.

Ask today for complete information concerning the Hoppin system.

Inquiries receive our prompt and careful attention. Do It Today.

C. A. Hoppin & Company
Incorporated
Engineers — Contractors
Peoria, Illinois

time the "Meco" shops will produce all the cutting wires used in the United States as they propose to make the wires of such high quality and the price so low that none will think of buying cutting wires elsewhere. The photographic view shown herewith gives some idea of the productive force of these machines.

⁂

BROWN PYROMETERS

The Brown Instrument Company, Philadelphia say: "If you want to know exactly what quality a product has it is well to hear what the folks think who use it every day—responsible, widely known folks right in your own business."

They have prepared a folder containing a few letters from users of their equipment which not only indicate what you might expect from Brown Pyrometers on your kilns, but they cover about every question you would want to raise about Brown Pyrometers. A copy will be sent on request.

⁂

IMPORTANT CHANGES MADE IN THE SUPPLY DEPARTMENT OF THE WESTINGHOUSE ELECTRIC & MANUFACTURING CO.

Reorganization of the supply sales department and the establishment of a merchandising sales department are the major changes in the organization of the Westinghouse Electric & Manufacturing Co., according to announcement made recently by H. D. Shute, vice-president of the company.

The changes, which entail the promotion and transfer of a number of officers and which are considered some of the most important actions taken by the Westinghouse company in recent years, became effective May 1, at which time the new merchandising sales department began to function.

J. J. Gibson, manager of the supply sales department, became assistant to the vice-president in the new plan of organization announced by Vice-President Shute. In his new position Mr. Gibson will have general supervision over the activities of both the supply sales department and the new merchandising sales department.

Other changes and transfers in personnel announced are as follows:

A. A. Brown is appointed manager of syndicate operations; J. S. Tritle, manager of the St. Louis office of Westinghouse Electric & Manufacturing Co., becomes manager of the merchandising sales department; T. J. Pace, assistant manager of the supply department, becomes manager of the supply sales department; C. E. Allen, manager of the Central Station Division of the Chicago office, becomes manager of the St. Louis office, succeeding Mr. Tritle; George Baily, assistant to the manager of the supply department, becomes supervisor of distributing agents; M. C. Morrow, assistant sales manager of the Westinghouse Electric Products Co., becomes assistant to the manager of the merchandising sales department, and J. J. Dorney, manager of the Industrial Division, St. Louis office, becomes asssitant to the manager of the merchandising department.

⁂

NEW INTERNATIONAL CATALOG

Catalog No. 20, now being mailed out by International Clay Machinery Co., Dayton, Ohio, gives information about every variety of industrial cars—different types of dump cars, platform cars, rotary scoop, hoppers, mine cars, kiln and dryer cars and others. One page is also devoted to "special" cars, so you should be able to fill any requirement.

Turntables, trackage and switches are naturally associated in the mind with cars, and therefore, it is logical that part of this catalog should describe the International Industrial Trackage and turntables.

Interesting tables are given showing the wheel pressures permitted on various rail sections, the size and quantity of spikes required for different weight rails, etc.

A copy will quickly be sent you on request.

⁂

RADIATION PYROMETERS

Dr. Thwing, Pd. D., President of the Thwing Instrument Co. Philadelphia, is a pioneer in developing radiation pyrometers. New Bulletin 11 describing their very complete line of indicating and recording radiation pyrometers, is therefore sure to be of practical value.

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BRICK and CLAY RECORD

Established 1892. Now in its thirtieth year.

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By Industrial Publications, Inc.

Entered as Second Class Matter January 2, 1911, at the Post Office, at Chicago, Ill., Under the Act of March 3, 1879.

Terms of Subscription
One Year—(26 Numbers)
United States.......$3.00 Foreign $4.00
Single Copies.......25c

Member of Associated Business Papers, Inc.
Member Audit Bureau of Circulations

Published Every Other Tuesday by
Industrial Publications, Inc.
Telephone: Harrison 9462
407 S. Dearborn St. Chicago

Branch Offices
New York Cleveland Kansas City

Address all communications to home office

Chicago, June 27, 1922
Vol. 60 No. 13

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The EDITOR'S CORNER

Promote Understanding Between Yourself and Your Labor

WHILE IT IS TRUE that business in the clay products industry is, on the whole, very good and that these same better times are reflected in a great many other lines, yet we know that many branches of industry have not yet recovered from the depths of the business depression, and are still struggling to reach a normal position. This means that industry as a whole is not yet going at full force.

In view of this situation, some rather alarming facts are learned when the labor situation is studied. Even now very many clay plants are experiencing difficulties in finding suitable men to establish a complete and efficient personnel at their plants. If this is true, what would be the case if the country were going at full swing in all lines of endeavor? True, there are at present still about 1,000,000 unemployed, according to figures available, which could be absorbed when industry fully revives. But in these million is represented the same elements that do not work even at the heights of business prosperity. Floaters, undesirables, and incapables make up a large proportion of these 1,000,000 men. Therefore, the labor situation deserves some consideration.

According to all indications, the next several years should see a big demand for clay products. The slogan will be "more production," and the industry cannot then afford to be vexed with labor difficulties. It is plain, therefore, that since even under present conditions we are already experiencing a shortage, this will become more acute as business gets better. We believe that the large majority of labor difficulties can be traced back to lack of understanding on the part of labor of actual facts and conditions, and to improper handling by foremen who do not use the right tactics.

One of the prime causes of dissatisfaction among wage earners is ignorance of fundamental business conditions. A successful manufacturer regards it as highly important to keep himself informed not only as to the conditions of his own business, but in regard to the general business situation as well. He employes all possible means to get this information, because it is necessary in the successful conduct of his business. As a result of this knowledge he is enabled to enter a wage conference with a solid background of information, and in the light of this information he asks his employes to accept a reduction in wages, an increase in hours or some change in working conditions which fits the fundamental change in the business situation.

What is very frequently forgotten, however, is that his employes, on the other side of the question, are not so familiar with changing business conditions and the immediate trend. The employe, as a rule, forms his opinion from the more or less inaccurate reports in the newspapers, the often distorted and biased views of his union papers and other unreliable sources. Thus the employer and his employe do not view the problem in the same light. With the same background of information, the reaction of the employer and the employe to the same fundamental conditions would be more apt to coincide. A mistake that the employer often makes is in trying to force his conclusions from the vantage point of superior knowledge upon employes who lack that knowledge.

The most important step which an employer can take is to begin the education of his men to give them a knowledge of fundamental business principles and the realization of economic conditions. What the wage earner ought to strive for is not more dollars or less hours per day at bigger pay, but a reasonable share in the products of his labor.

There are four items which enter into the selling price of a commodity—overhead, material, labor and property. If wages are doubled, labor doubles. Material ultimately is only labor, and will also double. Overhead is directly referable to labor and would double too. Thus, in the end, labor would get no greater proportion of its product than it did before. The purchasing power of the day's work has not been increased.

If the wage earner were given credit for a little more gray matter than is usually accredited him, and if he were given a better background on which to base his ideas, many of the problems and troubles attendant with the employment of labor would be eliminated.

The foreman is another very important element in the labor situation. Since he is always in direct contact with the men, it is highly important that he know how to handle them. There are foremen of the type who can not stand authority, become "swelled up" over their job and abuse the men. This invariably means dissatisfied labor. The clay plant manager who attaches any importance to labor will make this point the basis of an investigation in an endeavor to better conditions of his workmen.

If, upon the complete revival of industry, a labor shortage is to be avoided, you will have to begin now to work up a better understanding with your wage earners. Understanding means better harmony.

* * *

Only the Fittest Survive

There are many persons who are prone to criticise the clay industry because of its slow progress in industrial development, they claim, as compared to other industries. While it is true the industry has been slow in waking up to the uses of better methods and equipment, we must concede that the machinery and processes of the present day are a considerable refinement over those of our boyhood days.

But in the realization of the progress that has already been made, we must bear in mind that time goes on. In the wake of time, fresh developments mark the world's progress. What is new today is old tomorrow.

Manufacturers should ever be mindful that they must always be on the alert for progressive ideas and newer and cheaper or better ways of production. To think that because you have done well this year with your present methods and equipment you need make no further improvements, is to invite stagnation.

In 1905 there were over two times as many clay plants in operation as there are today. In other words, since 1905 over half of the number of establishments that were in operation at that time, have suspended manufacturing. This enormous mortality rate and the fate of this great number of plants that would not recognize progress should ever admonish every manufacturer to give his fullest and unbiased consideration to any new mechanical development or process.

Clay Men Warn Against Price Raising

Brick and Clay Record's Campaign to Hold Prices Down Meets with Approval of Prominent Men in Industry—Many Letters Received Show Manufacturers Are Not in Favor of Raising Prices Unduly

IN TWO RECENT ISSUES of Brick and Clay Record, attention of clay products manufacturers has been called to the folly and inadvisability of raising prices at this time. Prices should always bear a judicious relationship to costs, and it is a bad policy to raise prices temporarily simply because great demand makes it possible to obtain a higher price. It has been proven in practically every industry that this policy invariably reacts to the detriment of the manufacturers. Of course, if coal costs increase production costs also increase and it is necessary to raise prices on this account—which is perfectly allowable.

That the opinion of Brick and Clay Record regarding the raising of prices is concurred in by the industry in general can be seen from the large number of letters which have been received by this paper endorsing these editorials. If the names of the men writing these letters were published, the list would be practically a roster of the leading lights in the clay industry, representing some of the most important and largest plants in the country. A number of these letters are reprinted herewith.

Says High Prices Worst Thing That Could Happen

"It is the writer's opinion that if all manufacturers of building material will maintain price levels on a basis that represents a fair legitimate profit over cost, in the end it will be much better for the industry. However, I might add that as far as clay products are concerned, prices have sagged in this section below a fair profit over cost, and there will have to be some advances.

"In my opinion, the worst possible thing that might happen to the building industry at the present time would be for material and labor cost to soar as they did in 1920, and thereby bring on another stagnation."

"We are of the opinion that it is important that the brick manufacturers hold the price of brick down to a reasonable basis figured on the cost to produce same.

"In our case we have not raised the price, altho we can get and are offered more than we are selling brick for."

Increased Costs May Bring Higher Prices

"We believe these articles are timely and are written in the right spirit.

"Of course, it is very possible that the coal strike bringing about higher coal prices, and the possibility of labor shortage bringing about higher wages, may make some increases in the price of brick absolutely necessary. This would be entirely different from prices skyrocketing such as you refer to.

"I hope that all the brick manufacturers may take a like view of the situation and that the building boom which is started may be enabled to continue for at least several years, as the face brick men particularly have had a very lean time of it since war conditions began to prevail and could certainly stand a few prosperous years."

"I think you are perfectly right in advocating holding the price of material down as low as possible, but don't forget that the man who is manufacturing brick doesn't have the entire control of the price of material. He must eventually at least base his selling price on his cost price, and I am perfectly frank to say that at the present levels, the brick people are not making any money, and they won't make any until something is done towards lowering freight rates, fuel, cost of transportation, selling and so forth. We find in our different plants that labor is pretty well liquidated, both as to the wage scale as well as the amount of work done, and if other items entering into the cost of brick were adjusted as fairly as wages, it would go a long ways towards reducing the cost of producing our material."

Has Not Increased Selling Price All Year

"We are thoroly in accord with your expression of June 1 that if prices of material and labor are increased to any marked degree at this time stagnation and depression of business generally, and building business in particular, will result.

"Our several companies have had this in mind for several months past, and in spite of increased wages at some of our factories we have not increased our selling price in any instance during this year, and in some cases have made a considerable reduction. It may be, however, that unreasonable demands of labor will force us in some cases to make a slight increase in the selling price, but we feel it would be wise on the part of brick manufacturers generally to be satisfied with a very modest profit now in order to do their part towards increasing the volume of the building business."

Price Stability Given Public Confidence

"We have taken the stand that a fair return only should be exacted at the present time by manufacturers and dealers, and if there is any attempt to unduly raise prices it will react in a manner detrimental to the best interests of all concerned by reason of causing stagnation of business and, worse yet, intense dissatisfaction of everyone concerned, and this includes workmen, manufacturer, dealer and customer.

"The manufacturers today are having difficulty in getting a fair day's work from workmen and this is due to the fact that in certain lines of work excessive prices are being paid. As long as this continues it will cause a bad situation which will be very hard, indeed, to remedy.

"We have one very large order at the present time which is being held up by the owner because of excessive wage scale demanded by bricklayers and their helpers. This man is amply able to pay the price but he says it is wrong in principle to pay any such prices as are now demanded in certain centers and, as a consequence, his building operation which will run close to a million dollars is being held over, possibly until next year, and even then may not go ahead. I cannot think that this man is alone in his attitude and we will see more of this as the summer progresses.

"The brick manufacturers, particularly, should try to cultivate the confidence of the purchasing public and a stability of prices is the big end to be achieved. Of course, there must be some fluctuations due to labor conditions, raw material, prices, etc., but we cannot expect to have the best results unless we consider the purchaser's side of the question.

"Manufacturers of clay products must bear in mind that both lumber and concrete are real live competitors and any time that we place excessive prices on our material we will lose out to one or the other of these products.

"We hesitate to raise prices, even when we can see conditions that indicate a raise is necessary, for the reason that we desire to keep a full volume of business at our plants for only by doing this can we keep costs at the lowest point.

"The stock of finished product costs money and also costs further money for carrying charges, and the manufacturer should view all of these factors very carefully when making prices and endeavor to put his price at a point that will allow for certain fluctuations without disturbing the market price, or in other words, he should be in position to take a certain amount of the 'bitter with the sweet.'"

Holds Price Down to Fair Profit

"It is our policy which we are maintaining without much cooperation from some of our other friends, to hold the price of brick down to a price that will allow us only a fair margin of profit, regardless of the demand for same, and we believe that if the policy is lived up to by the brick industry as a whole, it will be some time before we will have another depression.

"In other words, we think that the industry should 'tote' fair with the public and only expect or demand from the public a fair margin of profit out of its products, refusing absolutely to take advantage of any temporary flurry or heavy demand."

The following letter from a Michigan company expresses the principle very well. This company does not believe that after it has urged the public to build and to buy its materials, and thus created a demand, prices should be raised as soon as the public has responded to the call.

Don't Break Faith with the Public

"We feel that raising the prices of face brick at the present time to any great extent would be extremely detrimental to the building activity thru which we are now passing. We have been encouraging building investment to the general public since September, 1920, telling the public that prices were reasonable and using every means possible to induce construction of all kinds; and we feel that now when the public has responded to this call, it would be extremely inconsistent to take advantage of them and raise prices beyond a reasonably fair profit to the manufacturer.

"As you state in your letter, it would break faith with them, and while the manufacturer might temporarily realize a better profit, it would not be long before the pendulum would start swinging the other way and manufacturer, dealer and everyone concerned would suffer.

"On the other hand, some manufacturers had various reasons for reducing their prices to a ridiculously low figure. Some of this has been caused by extreme competition and some by the necessity of moving large stocks. We believe that these manufacturers should raise their prices to a normal and equitable figure and keep them there. In other words, our entire argument is that manufacturers should establish a reasonably right price in accordance with their cost, with a fair profit, and let the public know that it can depend upon these prices to remain as they are."

These letters contain very sound advice, and altho it may sound like philanthropy to sell material at a price below that which it is possible to get, still it is nothing but sound business. In very many instances, price is the deciding factor in regard to the material to use for a new home. It is, therefore, of the greatest importance in order to insure the increased use of clay products in the home building field, to keep the difference between the cost of a frame home and a brick or tile home as low as possible. Holding your price down while the lumber man raises his will mean more houses of brick, more brick sold, and in consequence, greater profits thru greater production.

* * *

A. C. S. POSTPONES BRITISH TRIP

Dr. E. W. Tillotson has announced that members of the American Ceramic Society will not take their contemplated trip to England until 1923. This move seemed advisable due to the fact that very few had signed up for the trip and that at present conditions in England are abnormal. All members who had previously signed up for the trip will be taken care of by the steamship company if Dr. Tillotson is notified immediately. They will sail on the Aquitania, August 22.

This trip was planned at the instance of an invitation extended by the British Ceramic Society to members of the A. C. S. to visit plants in England.

* * *

A CORRECTION

An item in the June 13 issue of Brick and Clay Record stated that a ten per cent. freight rate cut would be effective on and after July 1. The heading over this item, however, said that the freight cut would not be effective before October 1. The title was in error, and should have read July 1 instead of October 1.

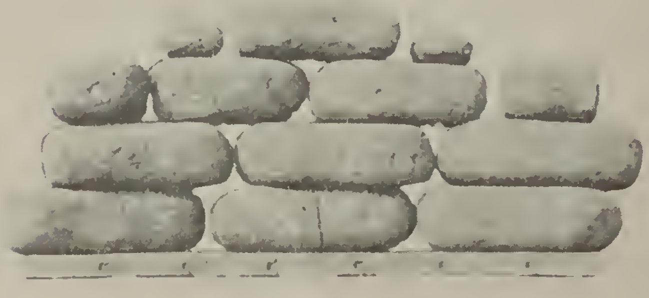
* * *

THIRTY YEARS OF IMPROVEMENT

Accompanying this item are photographs of two lots of paving brick which have been given the standard rattler test. Both were manufactured by the Springfield (Ill.) Paving Brick Co.

Ten brick showing the considerable loss of 33 per cent. were taken from a downtown street in Springfield which is now being torn up for rebuilding. The other lot which shows a loss of only 16.8 per cent. is a typical test for the block which are being laid in place of those taken up. The brick in the first mentioned group have seen 27 years of service, and were of builders size, burned hard. The brick in the street showed very little wear, and would undoubtedly have given good service for many more years to come had not the base, which consisted of a two-inch cinder cushion and another layer of brick, given way.

These brick were rattled simply as a matter of curiosity, and the results form an interesting comparison between the present day product and that manufactured 30 years ago. The sterling quality of the Springfield Paving Brick Co.'s present product can be seen in the excellent way in which they withstand the rattler test.



Results of the Rattler Test on Brick Made 30 Years Ago and the Modern Product. The Brick in the View on the Left Were Taken from a Pavement 27 Years Old, Which Is Being Resurfaced with Those on the Right. These Brick Lost but 16 Per Cent. in the Rattler Test as Against 33 Per Cent. for the Old Brick.

Business Briefs and Trend

BUSINESS SHOWS MARKED IMPROVEMENT

Figures received by the Department of Commerce up to June 20 indicate that the revival in business is getting on more substantial grounds. Among the favorable features may be mentioned the continued increase in the iron-and-steel industry which is now operating above the pre-war level; the sustained activity in the building industry, which continues to make new high records each month; the marked increase in the production of automobiles and trucks; the lower interest rates and increasing demand for money; the increase in employment and the decline in business failures.

Another matter of importance is the distinct upward trend of prices. This was more marked in May than in any recent month. In most instances the rise has not been great, but it indicates a much firmer demand than has heretofore existed.

⁂

STEEL OUTPUT APPROACHING CAPACITY

The present trend of business is reflected by the steel industry which is showing increased output. Sales of fabricated structural steel during May amounted to 82 per cent. of fabricating capacity, according to reports made to the Department of Commerce by firms comprising 70 per cent. of the fabricating capacity of the United States. The May business reported by 82 firms, having a capacity of 130,600 tons, totaled 106,620 tons as against April sales of these same firms amounting to 121,211 tons, or at the rate of 93 per cent. of capacity.

Total sales thruout the United States, based on the reported percentage and a total capacity of 180,000 tons, amounted to 146,900 tons in May, while revised figures for April give a total of 165,900 tons. The April figures are based on reports from 87 firms, having a total capacity of 132,600 tons, whose sales amounted to 122,198 tons or at the rate of 92 per cent. of capacity.

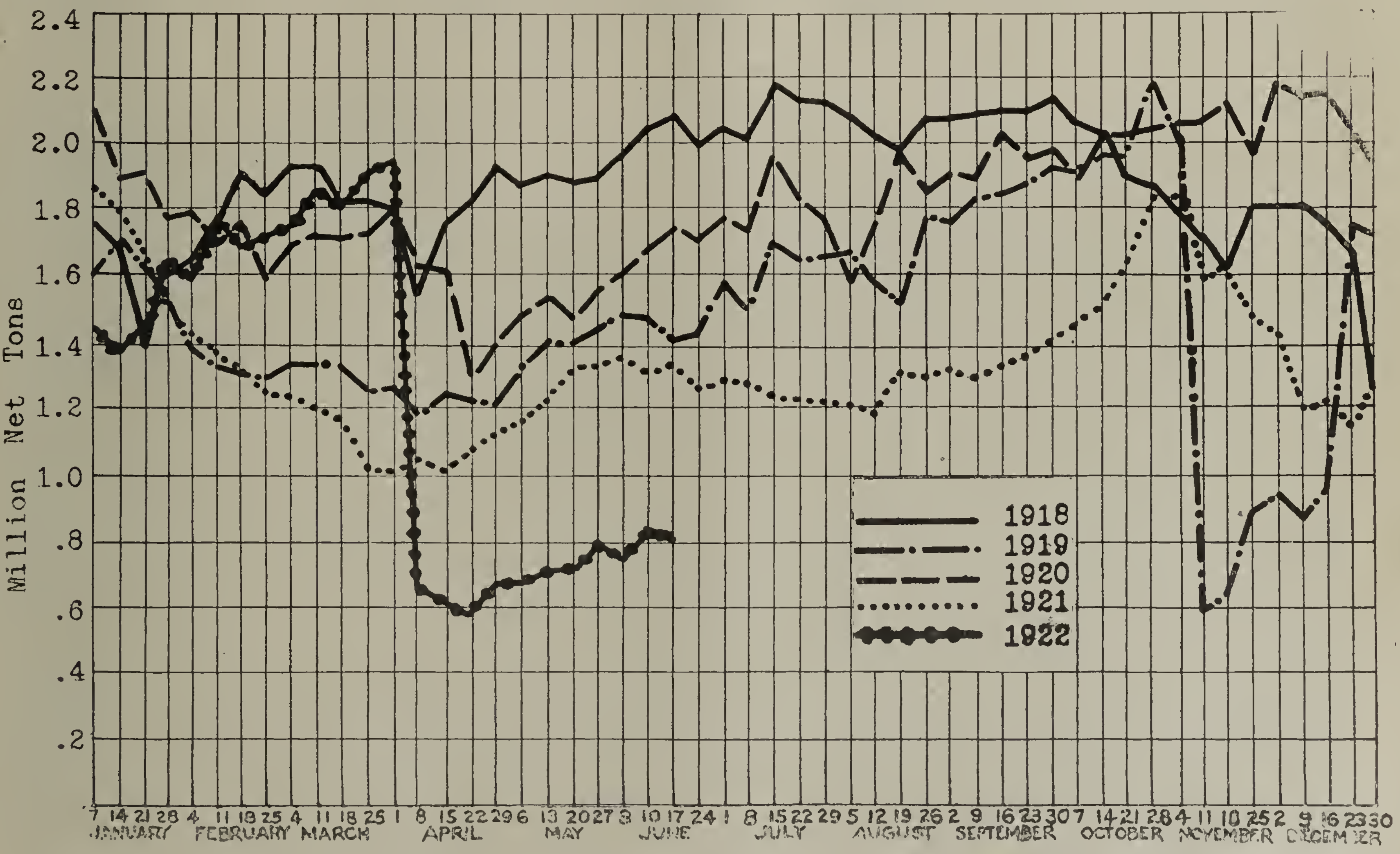
⁂

BUILDING MATERIAL INDEX NUMBERS

1913 Average Price—100

Commodity	Index Numbers At Peak Date	 Index	 Feb. 1922 Index	 Mar. 1922 Index	 Apr. 1922 Index
Building material index	1920	299.7	156.3	154.6	155.8
Brick, common, at kiln, Chicago	1920	251.1	169.7	173.1	172.5
Gravel, average for U. S.	1921	233.7	191.5	185.2	181.5
Hollow tile, Chicago	1920	256.9	128.3	128.3	128.3
Lime, common, average for U. S.	1920	286.0	206.8	210.2	210.2
Portland cement, at plant	1920	192.9	148.4	148.4	148.4
Building sand, average for U. S.	1921	209.6	167.6	158.2	159.2
Bars, reinforcing, Pittsburgh	1917	327.1	109.0	105.4	109.0
Nails, wire, Pittsburgh	1920	252.9	156.1	137.5	137.5
Structural steel, Pittsburgh	1917	331.0	99.3	96.0	99.3
Douglas fir, No. 1, at mills	1920	407.3	135.8	124.9	124.9
Hemlock, No. 1, northern, Chicago	1920	282.1	156.4	156.4	156.5
Lath, yellow pine, at mills	1920	582.0	140.7	140.5	143.1
Red cedar shingles, at mills	1920	346.8	148.0	148.5	155.1
Oak, white, plain, Cincinnati	1920	419.0	155.4	158.9	168.9
Yellow pine, flooring, at mills	1920	455.3	189.0	177.8	179.5
Plate glass, New York	1920	329.5	169.0	169.0	169.0
Window glass, f. o. b. works	1918	295.2	154.0	154.0	154.0
Linseed oil, New York	1919	480.4	176.9	177.4	179.6
Putty, New York	1920	226.4	179.2	179.2	179.2
Turpentine, New York	1920	601.8	210.9	203.2	202.3
White lead, New York	1920	229.3	181.2	181.2	181.2

Chart prepared by Department of Commerce, Division of Building and Housing of Bureau of Standards.



Estimated Average Total Production of Bituminous Coal Per Working Day. A Glance Will Suffice to Show the Tremendous Drop in Production During the Great Strike in 1919 and the Present One. Chart Compiled by the U. S. Geological Survey.

VOLUME OF EMPLOYMENT GAINS

The U. S. Department of Labor thru the Bureau of Labor Statistics here presents reports concerning the volume of employment in May 1922 from representative establishments in 12 manufacturing industries. Comparing the figures of May, 1922, with those for identical establishments for May, 1921, it appears that in 8 of the 12 industries there were increases in the number of persons employed, while in four there were decreases. Car building and repairing show 23.4 per cent. increase, while iron and steel shows a decrease of 18 per cent. Six of the 12 industries show increases in the total amount of pay roll for May, 1922, as compared with May, 1921. The remaining six industries show decreases in the amount of pay roll.

* * *

PRODUCING 5,000,000 TONS COAL WEEKLY

Production of soft coal is being maintained at the high rate of approximately 5,000,000 net tons per week. This production was recorded by the U. S. Geological Survey for the tenth week of the strike. Production in the eleventh week is expected to show a decrease as serious congestion of railroad yards and sidings in certain districts of Southeastern Kentucky interfered with the placement of empty cars at the mines. The number of men on strike in the mines remains practically the same. The rate at which the country's stock pile is decreasing can not well be estimated as the rate of consumption is not known. Certain it is that the stock pile has been eaten into and that any considerable revival of business would quickly bring about a widespread coal shortage.

Coal prices are being maintained in most sections either below or at the maximum levels determined upon by the operators and Secretary Hoover. The Secretary of Commerce has recently announced his intention of holding the coal operators to their maximum price agreement wherever possible.

* * *

NUMBER OF BRICKLAYERS DECREASES

We are indebted to W. S. Hays, secretary of the National Federation of Construction Industries, for the following occupational statistics taken from the United States census.

There are reasons for everything. No one questions the big percentage increase of automobile laborers and chauffeurs, because the remarkable industrial pickup of this industry is a matter of history.

But why the 23.6 per cent. decrease in masons? Why not as many construction painters as in 1910? The deficiency of skilled tradesmen in the building trades has been commented on again and again from one end of the nation to the other, but in spite of comment it still exists. Perhaps you have an answer for these figures. What is it?—*American Contractor,* June 17, 1922.

	1910	1920	Per Cent. Increase or Decrease
Structural iron-workers	11,427	18,836	64.5+
Boiler makers	44,761	74,088	65.6+
Brick and stone masons...........	169,402	131,264	23.6—
Electricians	120,241	212,964	77.2+
Carpenters	817,120	887,379	8.6+
Building laborers, general.........	869,478	623,203	28.4—
Iron and steel laborers............	482,941	729,613	51.2+
Automobile laborers	15,783	83,341	428.0+
Petroleum refineries, laborers......	11,215	31,795	188.6+
Rubber factories, laborers.........	13,546	51,467	280. +
Painters—building	273,441	248,497	9.5—
Paper hangers	25,577	18,746	26.7—
Plasterers	47,682	38,255	19.8—
Plumbers	148,304	206,718	39.4+
Roofers and slaters...............	14,078	11,378	19.2—
Paint and varnish factories.......	3,920	5,521	40.8+
Elevator tenders (male)...........	25,035	33,376	33.4+
Janitors (male)	91,629	149,590	63.6+
Soldiers, sailors, marines.........	77,153	225,503	192.5+
R. R. boiler washers..............	10,409	25,305	143.0+
Waiters	188,293	228,985	21.6+
Chauffeurs	45,786	285,045	522.0+
Population	91,972,266	105,710,620	15.0+

The Building Situation

HEAVY CONSTRUCTION work continues in the New England district. Building contracts awarded in May aggregated $33,000,000, thruout this territory, or 76 per cent. in excess of the corresponding month of a year ago. During the first five months of the present year new operations have been started to an amount of approximately $137,000,000, or more than double the total of the same period of last year. Residential work easily holds the lead.

Springfield, Mass., is among the cities where "boom" conditions prevail in construction work. During the month of May, 256 building permits were issued, and new housing operations reached a total of $554,000; plans were filed for no less than 100 garages, to cost $140,000, the majority utilizing hollow tile.

Leading cities in Connecticut are registering heavy building totals. During the first week in June the combined volume of operations in 14 cities showed $2,560,000. In the same week of 1921 the aggregate of these cities was $806,000, and in 1920, $616,800. There is a pronounced scarcity of masons and bricklayers at New Haven and vicinity, and carpenters are in heavy demand at a minimum rate of 90 cents an hour.

Operations Advance at New York

All five boroughs of the Greater City show advances during May, with June figures closely corresponding. Contract awards during May aggregate $51,640,000, an increase of 37 per cent. over the figures for the corresponding month of a year ago. Total building contracts in this city for the first five months of 1922 have attained a total of $263,000,000, or about 2½ times the record for the same period of last year. Of the aggregate noted, 57 per cent., or $151,663,000, represents residential operations.

The material situation has shown decided improvement during the past fortnight, and heavy incoming brick consignments have gone to alleviate the heretofore prevailing scarcity. The tone of the market is firm, and a $20 level, wholesale, alongside dock, has become a well-established figure. Arrivals from the Hudson River yards are now averaging from 50 to 55 cargoes weekly.

There is a marked scarcity of skilled labor in the industry at New York, and men from nearby cities in New England, New Jersey and Pennsylvania, are being attracted by high wage levels to secure local jobs. While labor scales are being maintained to a fair degree, there is an inclination on the part of contractors and builders to increase the established figures for desirable men. The Building Trades Employers' Association has made an agreement with bricklayers' helpers to pay at the rate of $7 a day, the arrangement to run until January 1, 1923.

Operations at Buffalo, N. Y., are breaking all previous

(*Continued on page* 1021)

New Ceramics Building Country's Finest

New Jersey Clayworkers Take Part in Dedication Ceremony — Dedication Marks Consummation of Untiring Efforts of Men Identified with Clay Industry

JUNE 13, 1922, will go down in ceramic history in America as a Red Letter day, for it marked not only the dedication of the finest building in the western hemisphere (probably in all the world) devoted to the study of ceramics, but also a distinct recognition of the high standing of ceramics as a subject worthy of the most profound study. This recognition was given by Rutgers College thru the conferring of the degree of Doctor of Science on the dean of the ceramic fraternity in America—Colonel Edward Orton, Jr. Everyone in the industry will grant the justice of the selection of Colonel Orton for this honor, for he has truly earned it. Yet it remained for Colonel Orton himself, in the modesty of his greatness, to declare that in accepting this honor, he did so with a very deep conviction that his selection was symbolic of the recognition of ceramics as worthy of a place on the curriculum of even orthodox old Rutgers with its 150 years of successful teaching.

Finest Ceramics Building in the Country

It is no idle boast to say that the new Ceramics Building at Rutgers is the finest in America—probably in the world—and such was the verdict of ceramic men from other states where this subject is taught. In a later issue of Brick and Clay Record it is hoped to give a detailed description of it, particularly after all the equipment is installed. The structure is built of brick with terra cotta and sandstone trimming, with a beautiful façade of terra cotta on the inside of the arch over the main or west entrance. This is a tan on pea green background and blends with the color of the brick. The brick used was selected from the Raritan River district, and in order to get a real rustic effect, brick that were overburned and without true symmetry of form were chosen. From the standpoint of masonry, the building is a work of art. Much floor tile, wall tile and color terra cotta have been used on the interior with excellent effect.

At the dedication of the building, Dr. Demarest, president of Rutgers, presided. After his invocation he spoke briefly of the pride the college takes in having such a structure for so important a branch of its work, and in turn he introduced some of those whose untiring efforts made this structure possible. He also referred to the fact that this date marked the twentieth anniversary of the founding of ceramic research work and teaching in New Jersey. Dr. Demarest introduced State Senator Thomas Brown, who had worked untiringly on the executive and legislative branches of the state government to secure final and favorable action on the $100,000 appropriation asked for. Senator Brown referred to the great good that must come to all citizens of New Jersey thru the use of this fund, thus justifying the expenditure as a public grant.

Donate $25,000 in Money and Wares

R. H. Minton, president of the New Jersey Clay Workers' Association, read a paper which was a history of the conception of the idea back of this Ceramics Building, giving praise and credit to the zeal, patriotism, and unselfishness of various members of the New Jersey association. Particular reference was made to Messrs. Chas. A. Bloomfield, Abel Hansen and George H. Cook, and the many others who gave time, money

The Group in Attendance at the Dedication of the New Ceramics Building, Rutgers College, New Brunswick, New Jersey. The Insert Shows A View of the Building Which Is the Finest of Any Devoted to Ceramics in the Country.

and ware to make this structure what it is. Up to the present time the New Jersey Clay Workers have donated $25,000 in money and ware.

Naturally proper credit was given to Prof. George S. Brown of Rutgers for his constant supervision. F. H. Riddle, president of the American Ceramic Society, in a few well chosen remarks, extended the congratulations of the entire ceramic fraternity to New Jersey for its accomplishment.

Colonel Edward Orton, Jr., read a most interesting and entertaining paper that recited the history of the study of ceramics in America. One of the outstanding features of this was in his reference to a search of libraries in his early days for books treating of American clays, and the only one he could find at that time was the work of George H. Cook, one of the early workers at Rutgers, and the founder of scientific research work in New Jersey. The old Cook residence still stands on the hill on the edge of Rutgers, and the new Ceramics Building is on ground that was formerly the Cook front yard.

RESEARCH WORKERS ARRIVE IN CLEVELAND

Continuing the research work in drying and burning, R. T. Stull, and the special U. S. Bureau of Mines laboratory car used for these tests, arrived in Cleveland, Ohio, recently. Tests were conducted there at the Denison plant of the Cleveland Builders Supply & Brick Co. The research party has been traveling over various states in the country conducting tests and experiments.

CHICAGO SECTION MEETS IN DANVILLE

Danville, Ill. was the gathering place of the Chicago Section of the American Ceramic Society on June 23. The many plants, both face and common brick, located in and around Danville, offered the visitors a fine opportunity to study methods of manufacture. A good program was arranged and the meeting was quite well attended.

Wise Dealers of Cleveland Give Aid Unto Needy Lorain Brothers

NOW IT CAME TO PASS that the merchants who dwelt in a town along the great inland sea known as Erie the Lake were sore and full of woe, for they were beset by many troubles, and knew not which way to turn. Their bartering in the commodities of construction, known as building supplies, which were sold to the natives for the making of their dwellings, warehouses and places of congregation, was being interfered with, and their profits were being cut unto the bone. All this in the city known as Lorain, Ohio, bordering the inland sea.

So the wise men of the industry of bartering materials for the buildings put their heads together, and decided that a call for help from the more powerful and mayhap wiser dealers in these commodities in Bagdad, better known as Cleveland, a bigger city to the east, and also on the inland sea known as Erie the Lake, would be the proper caper.

When the merchants of Bagdad heard the call they heeded it, and straightway made ready for a journey to succor their brothers in distress in Lorain.

They Mount Their Camel and Begin the Journey

And so it came to pass that the leaders in the industry in Bagdad were chosen to journey to Lorain, and give aid and surcease to the downtrodden. Thus, headed by their leader, Alvin, who is known as A. O. Preyer, and his aids, Chet, or C. M. Harris; Clarence, or C. A. Donley; Al, or A. L. Goldman, and Jimmie, or J. M. Walters, they made ready for the journey, taking their scribe, Zeltie as well.

Now the merchants of Bagdad were weary from their own efforts to beguile the shekels from the purses of the builders in Bagdad, and were not disposed to drive their own camels to Lorain, a distance of many leagues. So a camel of large proportions was interviewed at the market place, known as the Public Square, before the tavern known as the Hotel Cleveland, and George, the driver, asserted that it was a mighty camel and sturdy. Whereupon the camel knelt at his bidding and the travelers got aboard. But it was a thirsty camel, all precepts to the contrary notwithstanding, and arriving at Rocky River refused to budge further until given much drink. Whereat the driver, George, parted with shekels for both clear and yellow refreshment for the camel, and having satiated its thirst, the camel would on its way once more.

Upon arrival of the travelers at Lorain, they were met at the tavern, Hotel Lorain, and escorted to the banquet hall by the hosts, led by A. P. Largron, of the Largron Coal & Supply Co., and partook of rich viands, and having become contented and satisfied their hunger were ready to give the aid sought by their hosts.

Thus it came to pass on the suggestion of one C. F. Franklin, of the Brothers Franklin, of Akron, that the merchants of Lorain decided that the first way out of their problems was to join the provincial body known as the Ohio Builders Supply Association, and having enscribed the scroll presented them by Member Franklin they laid down a stated number of shekels to bind the bargain.

The Wise Men Solve the Problems

With this understanding they then made ready to organize in their own city of Lorain, and after much discussion created the Builders Supply Board of Lorain, with charter members, including:

Henry Frailey, of the Consumers Coal & Supply Co., as chairman, or leader; and G. L. Slater as scribe and handler of the shekels, he being of the Slater & McFadden Co.; and George K. Moon as official and executive scribe, upon whom the heavy work would fall.

And having settled the matter to the entire satisfaction of travelers and hosts as well, an additional offer from Member Franklin, and Member Harris, as ambassadors from the provincial body, was accepted, that Member Franklin stay with the Supply Dealers' Board of Lorain for several weeks, and at stated intervals meet with the members and assist them in further organization and perfection of their work. All of which was accepted gratefully by the merchants of Lorain, for they now saw the well known daylight ahead.

Likewise, as recognized members of the provincial body, they were urged by Ambassador Harris to attend the great gathering of the state outfits on the great inland seas on the days from the twenty-sixth to the twenty-ninth in July, and enjoy a good time for three nights and two days. And the members from Lorain admitted they were just about ripe for such a time, and accepted gratefully.

Following which the travelers commandeered their camel and returned to Bagdad, confident they had done a worthy deed.

New Stucco Lath Made of Burned Clay

Ohio Manufacturer Invents New Clay Product to Be Used as Stucco Base—Cheaper and Better Than Materials Now Used—Affords New Outlet for Burned Clay

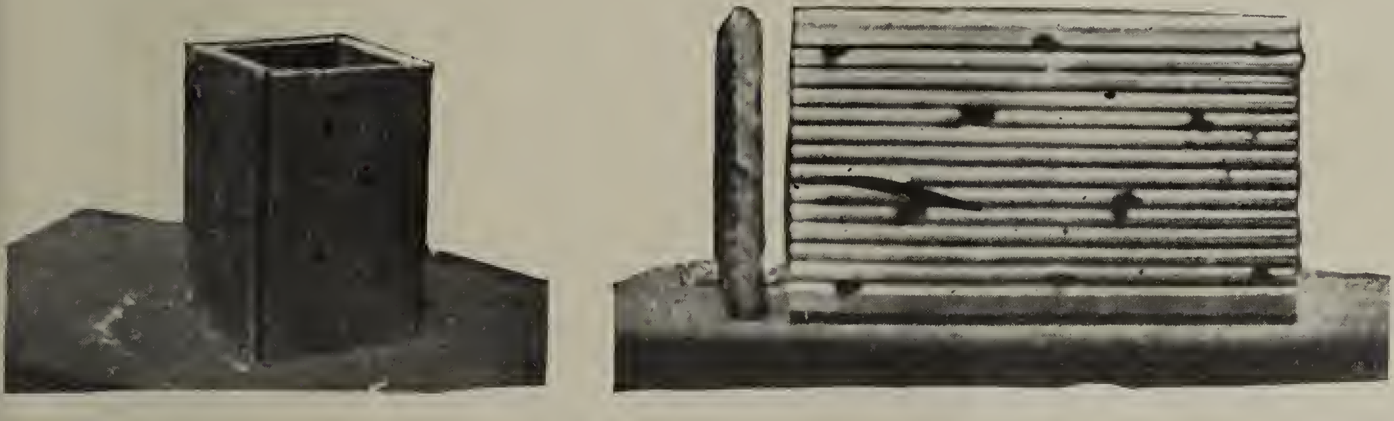
IN THE LAST FEW YEARS clay products have been making stupendous efforts to secure a greater share of the home builder's money. This has been hard, because it has been necessary to educate the public to the fact that the cost of a brick or tile home is not excessive.

In the past there have been two types of houses—the brick or tile home, of which the walls have been built entirely of clay products, and the frame home, in which, as a rule, clay products have little place. A patent recently taken out by Richholt Brothers of Holgate, Ohio, threatens to inaugurate a third type of house, a frame house, in the walls of which clay products play a prominent part. This is an entirely new clay product which that company is now manufacturing, and is of the greatest interest to clayworkers. It is a clay base to be used in the construction of stucco buildings, and provides an entirely new outlet for clay products. The completed product is in the form of slabs eight inches wide by 12 inches long by five-eighths inch thick. These slabs are perforated to permit nailing to the wall. The sides of the slabs are roughened something after the fashion of a hollow tile block, and stucco readily adheres to them.

At present, these lath are manufactured in only the 12 inch size, but it is the intention of the inventor to make a standard length of 16 inches. In order to use 12 inch lath on a building it is necessary to place them over sheathing or that they be nailed to siding in the case of surfacing an old house. Studding in a frame house is as a rule placed 16 inches apart, which will make is possible to use the 16 inch slab without the aid of any sheathing, applying them directly to the studding.

Made Like Hollow Tile

A very ingenious method is employed to manufacture these slabs, and avoid all possibility of warping and deformation. They are made on a hollow tile machine in the form of eight inch by eight inch square block 12 inches long. The corners of these blocks are then cut to a certain depth which makes it a simple matter to break the block into four slabs after burning. In the dryer and kiln, the slabs are handled in the shape of the aforementioned block, and treated much like a hollow tile. This method makes it a comparatively simple matter to produce perfect slabs, whereas if they were burned as slabs a large percentage of the ware would be spoiled due to warping and cracking.



Two Close-up Views of the New Clay Stucco Base. When First Manufactured It Appears as on the Left. This Block Is Broken Apart, Forming Four Slabs, Like Those Shown on the Right.

A glance at the photographs will show at once the nature of this new product. It can be stocked in the yards either in the shape of blocks or as slabs ready to ship. It would seem that this product would have a good market, since everyone knows that a clay base is not only practicable but highly desirable for a stucco building. Altho a building in which this clay "lath" is used would not be of as good construction and as permanent as either a hollow tile or brick home, it would be considerably cheaper and probably better than many of the stucco bases now in use.

Its inventors claim that this product could be very cheaply applied, since it necessitates no skilled labor or any experience in handling it. It is fastened simply with galvanized nails having a large head. Care must be taken that the nails are not drawn up too tightly as that may cause breaking.

Not Expensive to Use in Home

Houses which have been covered with this new slab as a base have required about 200 square yards each, and its manufacturers state the material for these houses has cost approximately $60. Twelve of these lath or slabs are required to cover a square yard of surface, allowing about one-half inch between them for a lock joint. The slabs weigh about 3½ pounds each, which makes the weight 42 pounds per square yard. In the homes just mentioned, four tons of this material were used, which sold at $15 per ton. The price which Richholt Brothers are quoting at present on these lots is $25 per thousand or 30 cents per square yard. This is equivalent to a price of $100 per thousand for the slabs in the block form, and affords a comparison with hollow tile.

A comparison of the price of this new product with that of other materials used as stucco bases reveals the fact that it is no more expensive and a better kind of base. There are some types of stucco base now being used which, with the building paper and other material necessary cost considerably more than 30 cents per square yard.

C. E. Richholt says. "There are many uses that a clay slab of this nature can be put to in building construction, such as in fireproof floor construction. This material in combination with steel joists and concrete produces one of the lighest and best and at the same time one of the cheapest fireproof floors.

No Special Machinery Required

"This base or lath will have a great advantage over wood lath, metal lath and other bases upon which stucco is now being applied. It can be manufactured in any clay plant

On the Left is a View of Richholt Bros. Clay Plant, Where the New Clay Product Is Being Manufactured. As Shown in the View on the Right, the Product Can Be Handled as Easily as Hollow Tile or Can be Stacked as Slabs Ready for Immediate Delivery.

and by the same machinery which manufacturers use to make drain tile or hollow block. No additional labor whatever is necessary.

"We have just started the manufacture of this product, and are producing them from a common red burning clay. I think that a shale clay would produce even a better product than the one we are getting from red clay. It is the only method that we know of by which a thin clay slab can be produced cheaply and which will go thru the processes of drying and burning without warping."

Richholt Brothers are making arrangements to license the manufacture of these lath on a very reasonable royalty fee. The fact that it requires no additional equipment of any kind should tempt manufacturers to try out the material. If it were manufactured in various parts of the country and were proven to be good, it is possible that it would prove the means of adding considerably to the national output of clay products. As a new outlet for manufactured clay, it is of the greatest interest and importance to the industry.

* * *

AMERICAN CONSTRUCTION COUNCIL FORMED

Franklin D. Roosevelt, formerly Assistant Secretary of the Navy, was formally elected president of the American Construction Council at the end of a two days' session held in Washington, June 19 and 20, at which leaders of the Construction Industry gathered to organize a body representative of all construction elements.

During the two days' session, 200 architects, engineers, general contractors, sub-contractors, construction labor, material and equipment manufacturers and dealers, financial, bond, insurance and real estate interests, public utility construction departments, Federal, State, County and Municipal Associations were considering what could be done to put the construction industry as a whole on a higher plane and to determine ways and means of working together to that end.

The immediate program of action suggested for the new council as a result of these deliberations include:

The formation of a code of ethics acceptable to the whole industry and to the public; the gathering of adequate statistics from all sources and resulting interpretation having all the facts; the reduction of the national shortage of building trades mechanics and the establishment of the necessary apprenticeship system; cooperation in establishing uniform building codes thruout the country; cooperation with the railroads in expediting the revision of existing freight rates on construction materials. The establishing and strengthening of local organizations thruout the country to bring about the cooperation of all elements in conformity with the principles of the council; the mitigation of the evils of seasonal employment and trade migration of labor; the encouragement of local building shows; simplification, standardization and elimination of waste; education of the public to the distribution of its construction and maintenance requirements more evenly thruout the year; the promotion of health and safety of workmen; the reduction of loss of life and waste of construction materials from preventable fires; the study of old buildings in order to establish superior methods of construction; the education of the public as to the necessity and economy of properly maintaining existing structures.

* * *

ADVERTISING SELLS MANY SILOS

Educational publicity to sell the farmers of western Canada the idea of the silo is being conducted by the Western Retail Lumbermen's Association of Winnipeg, Man. The first two pieces of literature sent out went out to 20,000 farmers and dealt exclusively with sunflowers and sunflower seeds. As a result of this publicity, seed companies have been completely sold out, altho they had stocked up with about 200 per cent. more sunflower seed than they ever carried before. What is an even better criterion of the success of this advertising campaign is the increasing amount of silo sales, particularly during the month of June. The aim of the association is, first, to sell the silo idea. The campaign has been so successful that it is expected before fall over 1,000 actually will be built. The cost of the silo campaign to each member was only $11, and returns on this investment bid fair to show usurious interest.

Permanent silos are as much to be desired as permanent buildings of any other type. According to reports from agricultural authorities, the number of silos to be built is enormous, and offers an excellent market for the progressive manufacturer. That it is a field worth cultivating can readily be seen from the Western Retail Lumbermen's Association campaign.

* * *

RAISES WORKMEN'S WAGES

The George J. Markley Co., Mineral City, Ohio, operating two local plants for the manufacture of burned clay products, has increased the wages of employes five cents an hour.

150 Attend New Jersey Meeting

Industry's Celebrities Attend Gathering at New Brunswick in Shadow of New Ceramics Building —New Jersey Association Now Has 250 Members

ON JUNE 14, following the dedication of the Ceramics Building at Rutgers College, New Brunswick, the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society held its annual summer meeting at the Trenton (N. J.) Country Club. This took the form of a one o'clock luncheon, served in true New Jersey fashion. Following the repast, and the grouping on the golf course for a photograph, the nearly 150 present adjourned to the assembly room where the meeting was called to order by President R. H. Minton. The business session was very brief but interesting, and brought out the surprising fact that the organization now totaled 250 members.

Mr. Minton read a paper in which he described his observations on the manufacture of hard porcelain, dealing mostly with the methods followed at the Royal Porcelain Works, Berlin, now 150 years old. Mr. Minton's explanation of the methods followed at this famous plant were made clear and very interesting thru the use of lantern slides. He also traced the history of porcelain manufacture, describing the development from its origin in China in the period prior to the Christian era.

Speak on Past, Present and Future

President Minton then introduced Chas. A. Bloomfield, counsellor of the association, who spoke on the subject, "The Past." Mr. Bloomfield is the acknowledged father of the present ceramics building at Rutgers, for he began to dream of it more than 40 years ago, and he worked diligently for it until it was an accomplished fact.

A. V. Bleininger spoke of "The Present," referring to the greater accuracy that holds now in research and investigation work in clay. To F. H. Riddle was assigned the task of prophesying "The Future." He referred to the necessity for better plant control, and gave as his belief that the mechanical branch of clay working will from this time on develop very rapidly. The modern tendency is toward quality production on a quantity basis. In Mr. Riddle's opinion burning processes will constantly increase in efficiency and oil and producer gas will be extensively used.

Colonel Orton Addresses Gathering

Colonel Edward Orton, Jr., was introduced and in his usual happy way referred to the necessity for doing everything possible to make the teaching of ceramics more intensely interesting to a larger percentage of college students. He also cautioned the members of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society that the degree of success of this work in New Jersey will depend on the constant effort they, as manufacturers, put back of the teaching and research work. Ross C. Purdy, secretary of the American Ceramic Society, spoke on the need for cooperation, not only among the New Jersey manufacturers, but between the various ceramic schools. His contention is that each school will help or hinder according to the character of its work, and that there must be no thought of a single section of the industry, but rather of an ever-widening ceramic fraternity. Mr. Purdy announced at the meeting that since January 1 the American Ceramic Society has made a net gain in membership of 117 corporations and 36 individuals, the total on June 1 being 1,642. Messrs. Cook and Stout, members of the New Jersey association, each spoke briefly on the subject: "Watch Rutgers and New Jersey," after which the meeting adjourned.

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CONGRESS APPROVES HIGHWAY PROGRAM

An annual appropriation of $50,000,000 for three years to be used for federal highway construction has been approved by Congress. To meet the needs of 14 states that will have used up their federal-aid allotments at different times during the fiscal year beginning July 1, the Secretary of Agriculture was authorized to create a deficit by obligating the federal government to meet payments on road contracts when the money is available. Thus the $50,000,000 for the next fiscal period will not have to be appropriated until near the end of the year.

The reduction of $15,000,000 in the appropriation for the fiscal year beginning July 1 is offset by creation of a deficit, and by the fact that the maximum federal contribution was increased. It is feared that the maximum of $16,250 per mile may have a discouraging effect on the construction of roads in swampy or mountainous parts of the country, and in the opinion of most federal and state highway officials the maximum should be raised instead of lowered.

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ATLANTIC CITY TO STAGE BUILDING SHOW

Following the example of cities all over the country, Atlantic City will stage a building exposition September 8 to 15. The show will be national in scope and it is hoped that over 400,000 prospective buyers will attend. The popularity of Atlantic City as a summer resort should make an exposition such as that planned a worth while undertaking. It is the aim of the exposition management to bring together under one roof at the same time representative demonstrations of the essentials for building construction, equipment and furnishings, taking in a full line of the best materials and supplies and various accessories pertaining to the construction industry. It is also planned to have available for exposition visitors reliable information on architectural service, opportunities for construction development in various sections of the country, best methods of building and financing, advantages of building associations, the adaptability of various products for building purposes, best forms and methods for decorations, and so forth.

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COAL INDUSTRY MUST REFORM ITSELF

"To make possible the cheaper coal that our American industries need, and also the larger earnings that both capital and labor deserve, the coal industry must reform itself," said Norman Hapgood, chairman of the public committee on coal, recently. One of the most important factors, Mr. Hapgood brought out, is the cooperation of labor. "The coal miners, whether in the anthracite field or the bituminous fields, cannot be put in a privileged class any more than the so-called coal baron," said Mr. Hapgood. "The world owes the coal miner a living only as he earns it, but he should certainly have a better chance to earn it. A longer year and a longer day—lower wages but more pay, less per ton or per day, but more dollars and more days in the year—is the equitable way of deflating coal prices."

Best Practises in Use of Explosives

Importance of Explosives to Clay Industry Underestimated—Methods of Use, Care and Economy for Clay Products Plants, Explaining Properties of Materials in Use

Editor's Note—The figures regarding amount and value of explosives used have been obtained from a questionnaire sent out by Brick and Clay Record recently. Other very interesting data from the same sources will be published soon in these columns. The data given in this article are accurate because they have been gathered from reports of actual conditions from the manufacturers of clay products.

VERY LITTLE LITERATURE has been available for use by the clay products manufacturer on the handling of explosives in the clay pit. The importance of explosives in industry has in the past been greatly underestimated, and it has not been given the attention it deserves. A survey conducted by Brick and Clay Record among manufacturers in the industry has revealed startling information as regards the amount of dynamite and blasting powder used annually. According to estimates made from figures received thru this survey, approximately 4,964,047 pounds of dynamite and 171,915 kegs of blasting powder are used annually. The total cost of these explosives, according to prices received from a large powder manufacturing company, is about $1,120,000.

On a great many plants the powder and explosives account runs to large figures annually, and the purchasing agent would therefore do well to familiarize himself with properties of various kinds of explosives to determine which is the most economical. When it is known that some plants use as high as 36,000 pounds of dynamite a year, the importance of the explosives item on the clay plant will be more fully recognized.

Altho there are quite a few grades of strength and several different qualities of explosives in general use for various purposes, there are two that are used by clay products plants more than any others, namely blasting powder of FFF size and 40 per cent. dynamite. These have been found in the majority of cases to give the most satisfactory and economical results.

Difference Between Powder and Dynamite

Blasting powder is an intimate chemical mixture of charcoal, sulphur and nitrate of soda. The uniformity of mixture and the density or hardness of the powder are the two qualities that distinguish the product of one manufacturer from that of another. There are usually seven sizes of grains in which blasting powder is manufactured, and FFF, spoken of above, is the size next to the smallest. Blasting powder burns somewhat like a piece of wood, paper or coal, the difference, of course, being that it is confined when it burns and also that it burns so quickly that the results of the combustion cause the disruption force which throws out and breaks up whatever is confining it. The action of black powder is that of a progressive burning substance whose speed depends upon the size of the grains, the closeness of the confinement and the intensity of the ignition agent. The nitrate of soda carries the oxygen which is necessary for combustion.

In addition to FFF powder, which is best for the usual charge in clay or shale blasting, there is an RR brand which is a combination of the FF, FFF and FFFF grades. The proportion of these various sizes is such that the small grains fill to a very large extent the spaces between the larger grains. This combination is, therefore, ten per cent. stronger than any single granulation, and is used extensively in open pits in heavy blasts after the hole has been sprung, as described later in this article.

Dynamite consists of nitroglycerin with an absorbent, such as wood pulp, and an oxygen carrier such as ammonium or sodium nitrate. Dynamite is really divided into three different classes, straight, ammonia and gelatin.

Three Types of Dynamite

Straight dynamites are the standard to which all others are compared with the possible exception of permissible explosives. The high freezing straight dynamites contain the actual amount of nitroglycerin given as their percentage strength. The ammonia dynamites and gelatins are made up to equal the corresponding strengths of straight dynamite on a weight for weight basis. The nitroglycerin dynamites have a quick smashing action, are the easiest to detonate, have medium water resisting qualities, are the most inflammable of all, require the greatest care in use, and possess the worst fumes of the three.

The ammonia dynamites are the least inflammable, have a fair shattering effect, will give a better spreading action, and in soft material are the safest as regards handling. By coating the nitrate of ammonia with a water resisting substance, and dipping the cartridges after filling in melted paraffine, their water-resisting qualities are very greatly improved. Their fumes are such as to allow them with very few exceptions to be used successfully in underground work.

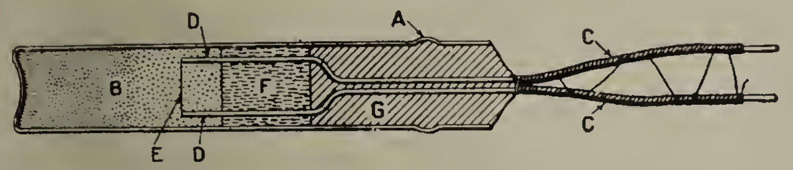
The gelatins are ten per cent. denser than either the straight or ammonia dynamites. They are as waterproof as it is possible to make an explosive, their fumes are the best of all. They are very plastic, which allows them to be loaded easily and effectively in tight work, and in holes pointed up-ward. Their action when properly confined is that of a

The estimated annual output of the clay products industry is 50,000,000 tons. According to a survey made by Brick and Clay Record approximately 4,964,000 pounds of dynamite and 171,915 kegs of blasting powder are used annually. This means that equivalent to one pound of dynamite is used to produce ten tons of ware and one keg of powder is used for every 290 tons of ware produced.

quick smashing effect. In the open their action is so slow that they should not be used for mud capping (explained under stripping) altho they are very effective for block holing. For mud capping the straight dynamites are the best, and the ammonias second. Straight dynamites are made in strengths from 15 per cent. to 60 per cent.; ammonia dynamites from 20 per cent. to 60 per cent.; and gelatins from 25 per cent. to 100 per cent.

Explosion Action Compared

The action of high explosives is that of the almost instantaneous decomposition of chemical compounds. The high explosives are manufactured on the high freezing and low freezing formula. The high freezing explosives are the old original type. The low freezing explosives are a more modern development and have practically entirely replaced the old high freezing kinds in this country.



Electric Blasting Cap (Cross Section). "A" is the Shell of Copper, Having a Corrugation Thrown Out from the Inside, Which Holds the Filling Material More Firmly in Place; "B" is the Chamber Containing the Explosive Charge; "C" the Insulated Copper Wires Entering the Cap; "D" the Bare Ends of the Copper Wires Projecting Thru the Plug into the Charge; "E" the Small Platinum Wire or "Bridge," Soldered to and Connecting the Two Ends of the Copper Wires Which is Heated by the Electric Current; "F" the Composition Plug Holding the Wires Firmly in Place; "G" the Filling Material.

The disruptive force of blasting powder is dependent upon the fact that it contains enough oxygen to form gases, when it is ignited, that occupy 1,000 or 1,500 times as much space as the solid powder occupied before explosion. Dynamite, on the other hand, depends for its disruptive force, on the fact that nitro-glycerin which makes up a large part of its contents, forms a gas when detonated which occupies 10,000 times as much space as the nitro-glycerin did before the detonation. In blasting work, dynamite does not burn but explodes at an incredibly high rate of speed, said in the case of 40 per cent. dynamite to be almost three miles per second. These figures to a great extent, however, are only approximations, as there is no method of measuring the exact force at the instant of explosion.

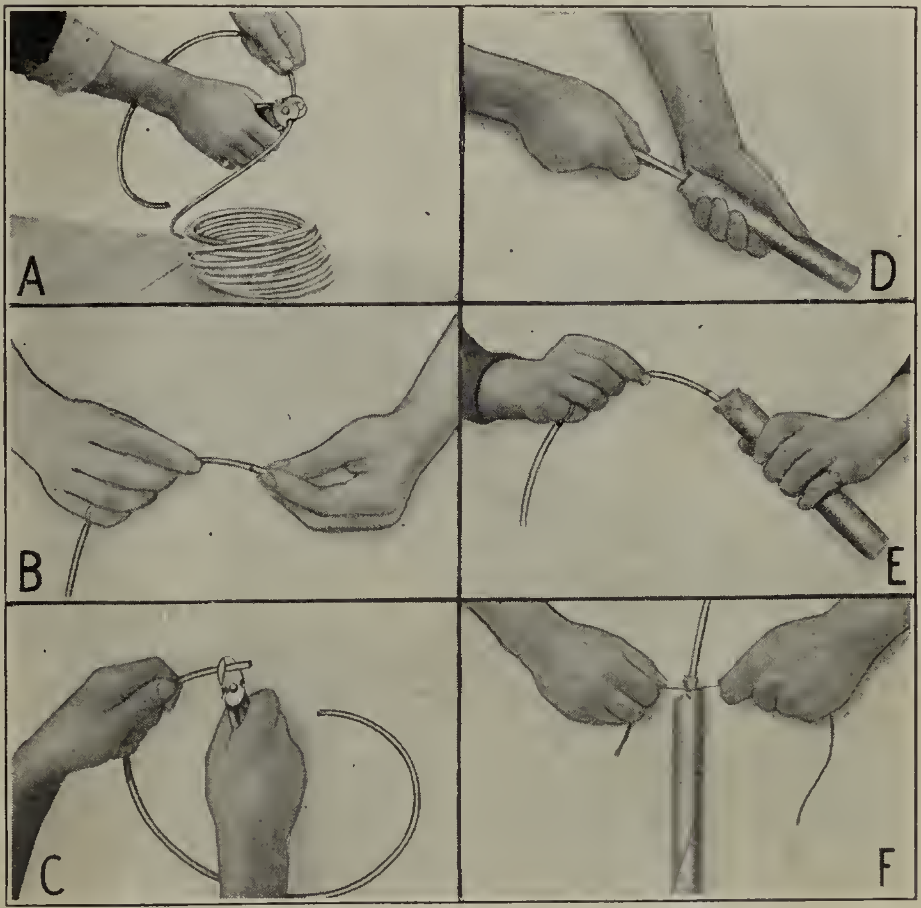
Intermediate Class of Explosives

There is also a set of granular dynamites commonly known to the trade as Judson, which forms a connecting link between blasting powder and high explosives. These are made by melting blacksmith coal, sulphur and nitrate of soda together in a steam jacketed kettle. This mass is afterwards broken up in the form of hard impervious grains about the size of FFFF blasting powder. These grains are mixed with 5 per cent. to 20 per cent. of Nitroglycerin. The smaller amount forms railroad powder and the latter contains the maximum amount of liquid that can be held between these grains. The 5 per cent. explosive is the one most commonly used. The best results with this are obtained when shot by means of a primer of dynamite of 40 per cent. or stronger in a proportion of 4 per cent. to 10 per cent. of dynamite according to the hardness of the material to be blasted. This type of explosive is used principally for blasting soft seamy material, whose softness is such that a regular high explosive will lose a large part of its effectiveness in pulverizing material immediately around the charge (called pot holing), and whose seams are so open that regular blasting powder will lose a great deal of its effectiveness by blowing out through these cracks. The 10 per cent. 15 per cent. and 20 per cent. granular dynamites are packed in cartridges and can be shot with a blasting cap, the same as the regular dynamites. The 5 per cent. variety is generally packed in 12½ lb. paraffine paper bags, four bags to the 50 lb. case. This explosive is very inflammable, and therefore, when blasting with cap and fuse, great care should be taken to prevent the fuse from coming in contact with the powder. In the winter time, if it is frozen and lumpy it can be used provided the lumps are crumbled up before loading.

Drilling Holes

The auger used in hand drilling resembles a carpenter's wood auger or bit, and the bar to which the auger is fastened is bent in the same shape as a carpenter's brace. In the case of a hand breast drill it is fed by the pressure of the driller's body against a cross bar while he is turning it. Another form of the hand auger drill consists of a cross arm forming a T, into which a wooden handle used to turn the auger is fitted. A form of machine auger is one that is fastened to a post and fed by mechanical screw feed. Auger holes are always drilled dry. Augers are used only in the softer clays, as the percussion method of drilling is more efficient in shale, fire clay, etc.

The percussion method as used by hand drilling usually employs a pipe or bar of iron which is of smaller diameter than the hole which is to be drilled, and which has welded on one end a drill bar of tool steel. The end of this piece of tool steel is flattened and sharpened so that the extreme width of the flattened part measures the same as the desired diameter of the hole and is large enough to prevent any chance of the pipe or bar becoming clogged or locked in the hole while it is being drilled. This drill cuts the material in the hole by the force of its weight dropped or pushed against the material to be blasted. A spoon which is a rod of small diameter having one end bent so as to form a hoe is used to clean out the hole. A small amount of water is usually kept in the hole when percussion drilling is used to facilitate the cutting of the material.



Placing Cap on Fuse. A. Cutting Fuse. B. Placing Cap on Fuse. C. Crimping Cap onto Fuse. D. Making Hole in Cartridge for Cap. E. Placing Cap in Cartridge. F. Tying Cartridge Paper Around Fuse.

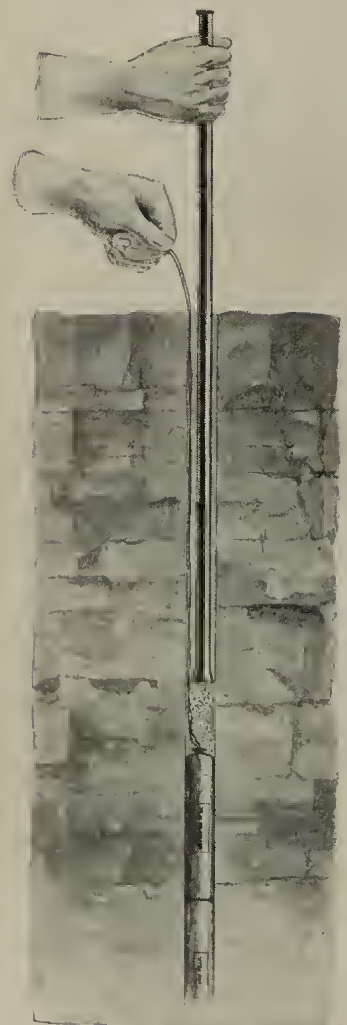
Drilling by Machine

There are several kinds of machine drills in use. Many plants use a well drilling outfit which may have any kind of power for lifting the drill. It performs its work by the weight of the drill dropped into the hole. A steam drill mounted on a tripod is also frequently used, especially if the material is very hard. The power consists of steam exerted against a piston.

The drills resemble the hand percussion drill bars spoken of above. That is, there is a shank or round part of the drill that is smaller than the hole and the end is sharpened and flattened to a width equal to the diameter of the hole. In the machine percussion drilling outfits the entire drill bar consists of one piece of tool steel instead of partly of pipe or of bar steel as in the hand percussion drill. A well drilling outfit is limited to boring vertical holes, whereas other power drills can drill holes at more or less of an angle.

In the past few years pneumatic air hammers and electric drills have come into use to a considerable extent for drilling holes. They are very satisfactory for use in mines and in plants that have not a large enough capacity to justify the expenditure for a well drilling outfit. The drill points or bars resemble those used on a steam drill or well drilling outfit.

Loading the Hole



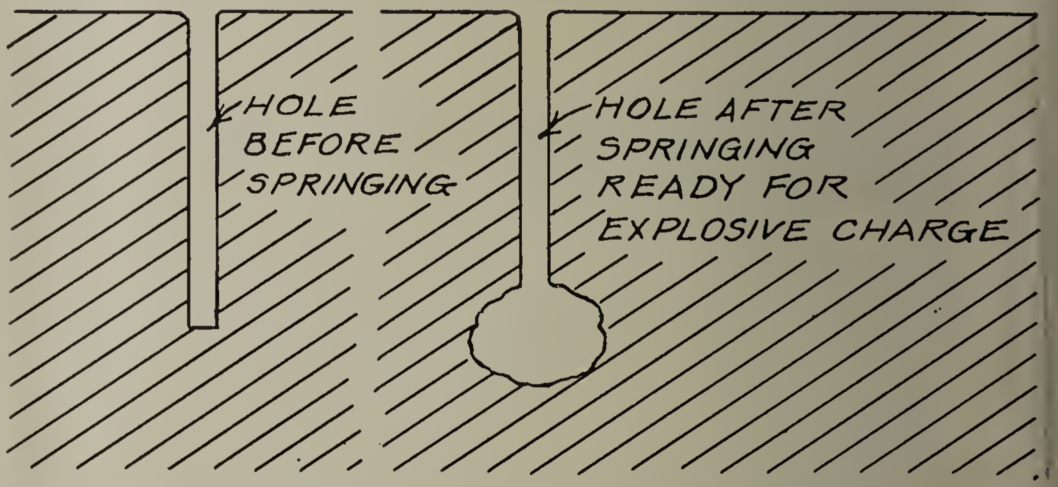
Good Method of Preventing Kinking of Blast-Wire While Tamping Filling in Hole.

All explosives work along the line of least resistance, and therefore in charging a hole we must not place the explosive so high that the upper part of the hole will blow out and the lower part, which is bound tighter, not be affected as we wish it to be. Two methods are advised to avoid this trouble namely, drilling the hole larger or deeper so that the required amount of explosive can be placed lower, or chambering or springing the hole. The latter operation is accomplished by detonating in a hole a small charge of dynamite without tamping. This explosion makes a cavity or chamber at the bottom of the hole, whose diameter or size is dependent upon the amount of explosive used. In some cases of hard blasting a second springing is practiced but that is very infrequent in clay products plants. There is one drawback to this custom that must be considered and which might reduce the effective force of the explosive. This is the possibility that the springing charge opens up cracks and fissures in the clay or shale which will reduce the force of the main charge.

For springing the hole, gelatin dynamite is recommended as the best explosive because on account of its plasticity there is practically no danger of it getting into cracks where it might not explode and later might cause trouble or accident. In many cases large savings in the use of explosives can be made by concentrating the explosive at the bottom of the hole.

Whenever the practice of springing is followed it is advisable to allow time for the hole to cool off after the springing charge has been fired. If the main charge is put into the hole too soon after the hole was sprung, the charge is liable to go off prematurely with disastrous results.

Amount That Can Be Used



Method of Creating a Pocket for Blasting with Powder.

In this connection it is interesting to find that a three-inch hole will take care of three pounds of powder and from three and one-half to four pounds of dynamite per foot of height. A four-inch hole will hold five and one-fourth pounds of powder and from six and one-half to seven and one-half pounds of dynamite per foot of height. In many open pit blasts the hole should go below the level of the pit, and both vertical holes and inclined holes (where hand drilling is followed), should be deep enough to confine most of the charge below this level. Otherwise springing should be tried. In underground work, a class of explosives called "permissible" should be used, if there is any danger of ignition of coal dust or gas. In almost all fire clay mines, however, blasting powder of which we have been talking is used. In open pit work there is a variety of practices. Some plants used nothing but powder, and this is satisfactory for soft surface clay, etc., others use all dynamite and others mix both powder and dynamite in the same hole.

Practice Condemned

Some manufacturers of explosives condemn the practice of using both powder and dynamite in the same hole. Dynamite makes a good primer for black powder, but the action of the two is so entirely different that where they are mixed with the idea of increasing the effectiveness of the blast, the results are almost always found to be expensive because so much of the force of the black powder is lost thru the openings made by the quicker acting dynamite; or the dynamite on the other hand may simply burn instead of exploding, which means a tremendous loss in explosive effect and an increased cost.

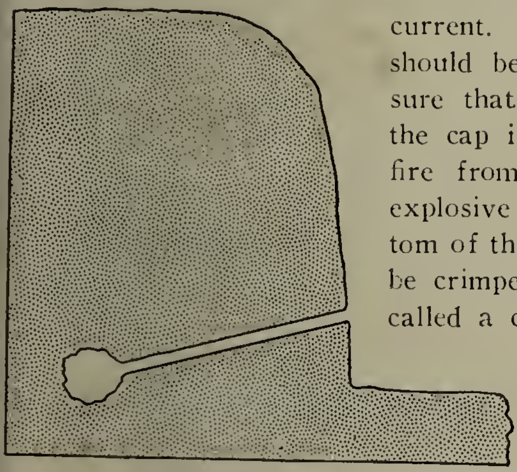
In a great many places it would be better to use all dynamite, as the disruptive material will occupy less space and therefore better results can be obtained with less cost. Those who follow this practice claim that they use the powder to break up the clay into chunks and the dynamite to throw it out.

The charge of explosive should be tamped in the hole lightly but firmly by a wooden stick or rod, and then the entire hole should be filled with tamping of fine dirt or clay which ought not to be very wet. Round paper bags are used in many places for tamping. These are filled with fine earth or clay, put in the hole and tamped into place. The hole can be filled much quicker when these bags are used. Under no circumstances should any exposed piece of metal be used on the tamping stick as it may be the cause of a premature explosion with disastrous results. Near the charge of explosive the tamping should be like the tamping of the explosive itself, firm but light, but when the tamping adjacent to the explosive has been finished, full force should be used, remembering that the results to be attained by the explosive is dependent upon its confinement.

How the Charge Is Exploded

There are two general methods employed in firing an explosive, one is by means of blasting caps which are exploded by a fuse, and the other by means of electric blasting caps which are exploded by an electric current from any desired distance. In either case the cap contains a small charge of fulminate of mercury which is highly explosive, and which is exploded in the one case by the spit of fire from the fuse and in the other case by the electric current. In using fuse, which should be waterproofed, always be sure that the end that is put into the cap is cut square and that the fire from the fuse will reach the explosive charge that is in the bottom of the cap. Fuse should always be crimped onto the cap by a tool called a crimper.

The electric blasting cap is to be preferred as it is much quicker, obviates any danger of investigating a misfire and enables the operator to fire more than one hole at a time. This multiple firing among other advantages, reduces the amount of explosive that must be used. There is good economy in getting detonators that are sufficiently strong for the charge that is to be exploded, because the stronger detonators explode the charge quicker and thereby less explosive is required.


Location of a Horizontal Hole for Blasting Down Shale or Clay.

Blasting machines, which are really portable dynamos for firing charges, are made in several sizes up to a capacity of 150 holes, but in clay products work, the machine with a capacity of ten holes is generally used. A small pocket machine is some times used for mines. Its capacity is three holes. In the absence of a regular blasting machine the writer has used two dry cells such as used on a house bell circuit, to fire not over one hole.

Best Practice with Blasting Caps

The blasting cap is more effective and the results more certain when it is placed in the end of the cartridge. The paper is unrolled and after the cap has been inserted into a small hole made by a piece of wood the paper is tied back into place, holding the cap securely. When powder is used a cartridge should be made up of about the same size as a stick of dynamite to hold the cap. This is easily done with any stiff paper.

There is an improved method of firing which can be used with the fuse and blasting cap or with the electric blasting cap equally well. This consists in using "Cordeau-Bickford," which is an instantaneous fuse, made up of a lead tube filled with a very high explosive traveling at the rate of 17,500 feet per second. This fuse is connected with each charge and another line of Cordeau-Bickford run along from one charge to the other connecting them together. A cap is placed at one point and this can be either a cap on the end of a fuse or an electric cap. The explosion of this cap sends the charge all along the Cordeau-Bickford and it travels so fast that the explosion of the charges in the holes is instantaneous. This fuse is very safe to handle and store, is not sensitive to friction or fire, and cannot be detonated by an ordinary shock.

The use of Cordeau-Bickford requires more care and accurate handling than other methods of exploding a blast, and therefore any prospective users are advised to obtain detailed instructions from the manufacturers of this equipment, since the precautions that must be followed require more space than can be given in this article.

Blasting Assists Digging Machinery

It is true that many digging machines are made heavy enough to dig almost any shale or clay without blasting, but at the same time this is not always as good economy as it might seem to be if the wear and tear on the teeth and other parts of the machinery are taken into consideration. A well drilling outfit and a few deep holes will enable the shovel to load more and do it easier, in fact the additon of a well drilling outfit will reduce the first cost of a shovel considerably because it will not be necessary to purchase as heavy a machine. It would be well for clay workers to consider this point when figuring on any new equipment.

For shaking up material to assist digging machinery, probably the RR granulation blasting powder would be the most satisfactory, because in this case a loosening of the material is all that is necessary. Where this type of work is done, the material must be soft, and consequently blasting powder would have the best spreading and heaving effect. Dynamite in stripping work is necessary for breaking up stones and blowing out stumps that may be encountered.

In some cases, for instance in mine work or in sinking a shaft and even in some open pit work, it is desirable at times to have one charge explode before another. In order to do this, with electric blasting caps and still not lose too much time in waiting for the charges to explode, electric delay blasting caps are used. With this system two or three successive blasts may be detonated by one application of the electric current.

Blasting for Stripping

What was said above about blasting assisting a shovel in hard digging, holds good in case of a fire clay plant that must strip shale, etc., to get down to its fire clay. Blasting down of the shale will assist materially. Dynamite also helps in stripping work especially when stones or roots are encountered, as a small charge of dynamite is sufficient in each case. Some stones can be broken by mud capping, that is, by placing a charge of dynamite on a vulnerable part of the stone and covering with a layer of mud, several inches thick. A little experimenting will determine the amount necessary, and in the absence of any experience the first charge should not be over a half of a stick of dynamite, as that is sufficient in many cases.

Dynamite Freezes

One of the drawbacks to the use of standard nitro-glycerin dynamite is that most blasts freeze at 50 deg., and it is extremely dangerous to handle when frozen. All manufacturers give very specific instructions not to do anything with frozen dynamite except thaw it out, and this is done by heating it in a place where the heat can be kept at or below 90 deg. F. Placing it in warm water is good, but open to the objection that water injures the dynamite.

Section of Improved Dynamite Thawing Kettle.

There are several thawing kettles on the market in which the dynamite is put into a metal container and warm water poured around it or in which the warm water is held in a chamber or jacket on the outside. These have all the advantages and none of the disadvantages of thawing in direct contact with warm water.

If the temperature is allowed to rise much above the 90 deg. spoken of above, dynamite is very susceptible to shock and to the danger of being exploded from heat.

In order to overcome this trouble due to freezing, the composition of dynamite has been improved and other explosives substituted for nitro-glycerin so that now, so called low freezing dynamite is on the market in many varieties. Ordinarily this class of dynamite will not freeze until the temperature falls below 20 degrees, and there is one brand on the market which is proof against freezing at temperatures near zero.

Most Dynamites Are Low Freezing

Over 90 per cent. of the high explosives used in this country today are of the low freezing variety. On account of the fact that clay digging and mining must be carried on at temperatures at which most straight dynamites freeze, it cannot be too strongly urged upon all that they use nothing but low freezing grades at all times, on account of the economy and safety with which they can be handled. They can be purchased of the same strength as straight dynamite. Besides the saving of the bother and cost of thawing dynamite when the temperature is known to be low, the danger of using dynamite at temperatures from 40 to 50 deg. F. is avoided. A man who handles dynamite scarcely notices the difference when the temperature falls to 50 deg. and therefore it seldom occurs to him that there is any possibility of the dynamite being frozen at that temperature.

Dynamite and powder should be stored in a dry, well ventilated place and kept at a reasonably cool temperature. The best practice has been to build a brick store house with a well ventilated floor, that is, a floor which sets up from the ground and thereby prevents any dampness from gathering. This building should be removed a considerable distance from any place in which anyone is employed, and blasting caps and electric detonators must be stored in some other building. The government will not allow a blasting cap to be shipped with an explosive and just as great care should be exercised after the material has arrived at destination.

Dampness injures the strength of explosives very materially, and that is why it is very imperative to have the floor of the storehouse or magazine built high enough to insure thoro ventilation underneath. Of course the walls and roof must also be waterproof.

How to Gage the Amount of Explosive to Use

As spoken of above, the results obtained by explosives is dependent upon their strength, their confinement, and the speed with which they are exploded. They can be purchased in varying strengths so that it is easy to determine which is the most economical to use in each case. Frequently a weak slow explosive will do more work than a strong quick one. A general rule is that a soft material requires a slow explosive and hard material a quick acting explosive, but this rule has many exceptions. In every case, however, a detonator of sufficient strength should be used. In regard to confinement, it is said that the holes should be drilled to the depth of the pit floor. If there is a free slip at this point, this distance need not be very great. On the other hand, if the holes are drilled too deep the explosive does not act to its best advantage and the amount required is unduly high. A record of the depth of the hole, the distance from the face, the amount of explosive and size of detonator used, and the results obtained would assist many manufacturers in getting better results and reducing their costs in this work. The speed with which explosives ignite is dependent a great deal upon the detonator used. If the detonator is of the proper strength the full value of the dynamite or powder will be obtained, and full economy will result. If, however, a detonator of too small strength is used, the lack of speed with which the explosion or flash passes from one part of the dynamite or powder to another reduces the force of the blast very materially, thereby increasing the cost.

Sound Indicates Proper Amount

The best results from blasting powder are obtained when the charge is ignited in the center, from which the burning takes place in all directions. In the heavier charges in sprung holes the best method of igniting the charge is to make a primer of regular dynamite and an electric blasting cap, placing this as close as possible to the center of the charge.

At times it is hard to determine the proper amount of explosive to use, especially in new work or for an inexperienced man. It is safe to follow the rule that if there is a sharp detonation and the material scatters in all directions too much explosive has been used. A proper charge will explode with a deep boom and the material will drop into place without scattering in all directions. Frequently the proper amount of explosive for a deep hole is used, but the hole has not been drilled deep enough. This, of course, results in scattering, as the amount of explosive is too large for the hole.

In purchasing explosives the price per pound should not be the only criterion by which to judge of the economy of the material. Some explosives are heavier per cubic foot or per cartridge, and in others a large volume or a larger number of cartridges can be purchased for the same amount of money. In every case the cost of the explosive needed to do a certain amount of work should be the determining factor in its purchase and use. This can be found easily by using two kinds of explosives in two different holes with identical conditions as far as possible. This is comparatively an easy matter to arrange in the pit or mine of any clay products plant.

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PAVING BRICK MAKES LASTING FRIENDS

Experience with vitrified paving brick has made an ardent booster out of Williamsport, Pa. One of the local papers, the Williamsport Grit, recently carried some interesting figures regarding the cost of brick pavements versus others. This paper says according to the latest issue of Dependable Highway:

"The real cost of a pavement is its original cost and the cost of its maintenance. To illustrate: One of the brick bids for Third Street makes the cost of the pavement and city's share of curbing $55,847. The ——— bid is $53,779, a difference in original cost in favor of ——— of $2,068. After ten years at the longest this ——— will have to be relaid, if the experience of Williamsport counts for anything, at a cost, say, of $1 per yard. The last time the city relaid ———, it paid $1.32 a yard. A dollar a yard for 15,000 yards is $15,000. Some citizens persist in arguing that, therefore, at the end of ten years, the ——— will have cost $53,779 plus $15,000 or $12,932 more than the brick, which can be expected to hold up traffic for ten years without serious deterioration. Some brick in Williamsport has held up the heaviest traffic the town has to offer for almost 30 years and while it is somewhat battered, it is 'on the job' every day, holding up traffic. And to date it isn't debtor for any maintenance expense."

* * *

HEAT ABSORBING QUALITIES OF BRICK

Thru recent experiments with brick in the Sudan some interesting things have been discovered in connection with the inside temperature of brick exposed to the sunlight. In plain burned brick the interior temperature was 57.8 deg. C., while for sun dried brick the temperature was 54.3 deg. C. By whitewashing the brick a lower temperature was obtained. In a whitewashed mud brick the temperature was 49.5 deg. C. and in a whitewashed burned brick was 48.3 deg. C.

* * *

PUBLISHES FIRE CLAY BOOKLET

An attractive booklet is being published by the Northern Refractories Co., Ridgeway, Pa., describing the many high grade products turned out at this company's plant. The company markets several good grades of fire clay which are much in demand by certain refractory users.

FINE CERAMIC MANUFACTURE

A Department Devoted to Practical Problems in the Manufacture of Higher Grade Ceramic Products such as Whiteware, Including Electrical Porcelain, Floor and Wall Tile, Sanitary Ware, etc., as Well as Stoneware, Terra Cotta, Special Refractories and Other Articles Where High Grade Clays Are Employed in Their Fabrication.

BRITISH POTTERS START RESEARCH WORK

THE BIG POTTERY export houses in London, England, largely depleted their order books and incoming business is unequal to output. As a result the export houses are showing increased activity in the home trade and these firms chiefly dependent on the home market for their business are resentful of this intrusion at competitive prices. Unemployment in the pottery industry is now down to 12 per cent. but bulk orders still are rare. The London market continues flat and the large stores are ordering sparingly. Business is booming in building tile and the manufacturers are increasing their trade abroad. This applies also to sanitary ware particularly with the export houses.

Simultaneously with a tour of the Scandinavian pottery fields by the Ceramic Society of Britain comes the announcement that the British Pottery Manufacturers' Federation has embarked on a scheme for definite and organized technical research for which it is hoped a sum of around $50,000 will be available each year. The research work carried on at considerable cost during the war resulted in a new body and appropriate glaze being evolved, the purpose being to discover a hard paste porcelain. Revolutionary changes in technical methods have prevented the potters from taking up the manufacture of hard porcelain, so far, quite apart from the question of Japanese and Continental competition. But the potter here now realizes that there are new avenues of trade awaiting development thru the introduction of new technical processes in bodies, glazes and colors.

The real feature in this disposition of the potters here to reach out for extra trade is the research work now being carried on in china clay circles. Special attention is being directed by the clay folks to colloidal chemistry, the medium by which the new colloidal clay is produced. It is a highly refined and purified material commanding many dollars more per ton than ordinary china clays. Where the colloidal chemical process is undertaken special installation is necessary, tanks being sandwiched between the washing and drying apparatus in the china clay works. The china clay is treated chemically in its liquid state before passing to the drying pans of the kilns. Much interest is being aroused in the new clay and several patents have been taken out.

As for the china clay industry itself, Europe is gradually opening up for this product once more, France and Belgium being particularly keen on importing it. The Cornwall and Devonshire china clay plants have not been too busy since the war but things are now looking up. Their total 1921 output was 350,000 tons. The last six weeks were the busiest the china clay trade has experienced since 1920 and it is believed the output figures will be increased for 1922. The majority of the shipments are going to France and Belgium.

* * *

MAINE HAS MANY FELDSPAR DEPOSITS

Freeman F. Burr, acting state geologist of Maine, is urging the complete survey of the state's mineral resources, which are practically untouched. The timber lands and fisheries of Maine are not now the great source of income they once were, and Mr. Burr believes that new sources of wealth are to be found in the minerals. Feldspar occurs in great quantities in Maine, and is shipped to the potteries in New Jersey and Ohio to be used in connection with English pottery clay. Mr. Burr points out that there is opportunity for the manufacture of pottery in Maine, since feldspar can be easily secured, and the English clay has to be imported.

* * *

EAST LIVERPOOL PLANTS BUSY

Orders are coming in satisfactorily to the pottery plants in the East Liverpool district, and all are now approaching capacity production.

* * *

REDUCE MISSOURI CLAY RATES

Poplar Bluff and Southeast Missouri have scored a real victory in certain freight rate concessions granted to the city and to the district, thru the activities of L. E. Rambo of the Chamber of Commerce Traffic Bureau, special attention being given to rates on clay products. One of the important victories of Mr. Rambo in behalf of the commerce body was the establishment of a new freight rate on clay from this point to the Central Freight Association territory which includes Ohio points, where most of the china manufacture is handled. The rates operate between here and Ohio, Indiana and Michigan and the tariff committee of the railroads has passed on the rate. It was formerly $7.44½ per ton to Sebring, Ohio, while under the new rate it is $5.83½ per ton. The rates to other points are also reduced and will mean a big saving to clay men of this section, who ship a great deal of their products to Eastern plants.

* * *

ONE OF NEW JERSEY'S PIONEERS

The consolidated concerns known as L. H. McHose, Inc., The McHose Clay Co. and the Such Clay Co., all located near Perth Amboy, N. J., are among the pioneers in the clay industry. The last mentioned was organized in 1856 by George Such, and later managed by his son, J. R. Such, both now deceased. Such washed ball clay, which is used in the manufacture of high grade clay products, was established by this concern. The McHose Co. began operations in 1885, employing from 15 to 30 men. At the present time nearly 300 men are employed at the three plants. L. H.

McHose and M. M. McHose, manager, now head the company.

The company has about 400 acres of clay land from which is produced nearly every variety and quality of clay found in that section. It is used chiefly for making fire brick, hollow tile, sewer pipe, pottery, floor tile, porcelain and stoneware. Clays mined by these three plants are sent to practically every section of the eastern United States where pottery and tile are made, as well as to Canada, Michigan and Ohio.

* * *

MADDOCK'S EXHIBITS IN DETROIT

The Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary earthenware products, is making improvements in the shipping department at its plant. A new platform and driveway will be constructed to provide for greater facility in loading. The company had an interesting exhibit at the National Plumbers' Convention, Detroit, Mich., June 6 to 10, a feature being a complete display showing the manner in which sanitary ware is manufactured. A. M. Maddock, Oscar Riegel and John Kelly from the Trenton headquarters were in attendance.

* * *

POTTERY PORTRAYS CHEMICAL HISTORY

A fountain of art pottery which portrays the history of chemistry from the earliest period of history down to the present time has just been presented to the University of Cincinnati by the senior engineering class of 1921. The fountain is said by authorities to be a remarkably artistic embodiment of certain symbols and figures which are typically characteristic of the foremost periods of chemistry.

* * *

DALLAS POTTERY USING TEXAS CLAY

The Dallas (Tex.) Pottery Co., located near Oak Cliff, is the first pottery to be established in Dallas County. This new plant is in charge of A. E. Wilbur, who has been a potter since childhood, and claims to be one of the two in the world who know the secret of blending colored clay. At present clay from Athens, Tex., is being used, but Mr. Wilbur is experimenting with Dallas County clay in hopes of finding a type suitable for pottery making, and is of the opinion that Dallas clay will eventually be used entirely. Jars, vases, urns, garden ornaments, pitchers, and many other articles are turned out by the eight pottery makers employed at the plant. The more elaborate pieces are made by hand. It is said that only a few of the old school of hand potters remain in the United States, and that two of them are working at the Dallas pottery.

* * *

SANITARY WARE CAPACITY INCREASES

Indications are that the production of sanitary pottery during 1922 will show marked advances over previous years, this on account of increased kiln capacity. In the Trenton district nine updraft kilns on the bisque end have just been added to the total of the country and a tunnel kiln to the glost end. The new tunnel kiln being built by the Kalamazoo (Mich.) Sanitary Manufacturing Co., as announced elsewhere in this department, will also increase the country's bisque capacity.

* * *

BELGIUM'S FOREIGN POTTERY TRADE

Not only the recovery but the actual expansion which Belgium was able to make in its foreign trade in clay products last year can, when the complete prostration of industry in that country during the war and the stagnation of business everywhere in 1921 are taken into consideration, be viewed in the light of an achievement, says Commerce Reports. From the pre-war and post-war figures presented below the extent of the revival in imports and the expansion of exports can be traced (kilo=2.2046 pounds):

Articles	1912 Kilos.	1913 Kilos.	1919 Kilos.	1920 Kilos.	1921 Kilos.
Imports					
Earthenware, fine (except tile)	10,016,370	10.515.035	3,946,567	3,745,623	5,103,986
Chinaware (except tiles)	2,764,808	3,230,004	303,584	1,031,952	1,531,339
Terra cotta:					
Brick, drainage pipes, and similar articles	116,394,640	127,012,674	13,128,847	58,609,397	104,183,152
Tiles, varnished, enameled and tongued and grooved	15,578,980	18,055,064	12,103,766	2,509,877	13,968,079
Tiles, other	6,661,007	5,901,697	2,332,261	2,333,637	608,447
Paving and building blocks and tiles:					
Tiles and paving blocks of earthenware or stoneware	1,994,476	1,876,450	335,047	555,695	388,318
Concrete blocks	122,976	189,263	42,546	282,180	110,848
Tiles of fine earthenware or china	581,775	685,387	58,617	260,108	265,307
Tiles and blocks, not specified	913,993	900,746	194,659	256,586	528,912
Common pottery	8,627,505	6,073,816	937,328	2,547,049	2,368,236
Total imports	163,655,830	174,440,136	33,383,222	72,132,104	129,056,624
Exports					
Earthenware, fine (except tiles)	6,717,233	7,512,689	617,401	2,483,986	2,254,705
Chinaware (except tiles)	45,354	54,174	6,280	97,402	180,361
Terra cotta:					
Brick, drainage pipes and similar articles	277,960,821	286,969,404	246,694,197	545,811,966	795,520,814
Tiles, varnished, enameled and tongued and grooved	2,579,874	3,059,078	8,599,257	36,908,002	51,888,761
Tiles, other	6,691,844	4,860,063	7,739,425	25,825,174	24,039,247
Paving and building blocks and tiles:					
Tiles and paving blocks of earthenware or stoneware	5,122,227	5,896,200	4,696,647	22,317,905	14,426,540
Concrete blocks	5,570,813	5,078,412	2,045,137	18,149,059	16,735,510
Tiles of fine earthenware or china	6,722,967	7,647,111	885,616	6,069,495	4,232,934
Tiles and blocks, not specified	1,135,269	1,581,728	4,561,179	6,600,178	1,857,894
Common pottery	7,930,768	6,218,682	2,654,910	5,226,852	2,417,438
Total exports	320,477,170	328,877,547	278,500,049	669,490,019	913,554,204

As can be seen, most of the 1921 export gain occurred in "terra cotta brick, drainage pipes, and similar articles." Of the increase under this heading, the greater part was due to larger shipments to the Netherlands, which is credited with 695,796,788 kilos of these wares, against 410,065,857 kilos in 1920 and 198,475,769 kilos in 1913. France, the next largest buyer last year, took 79,921,634 kilos, contrasted with 126,790,900 kilos in 1920 and 46,041,930 kilos in 1913. The exportation of 11,933,569 kilos of these brick and pipes to Great Britain (the country ranking third in 1921) was a revival of pre-war trade, shipments thereto in 1913 having amounted to 12,128,239 kilos, in 1912 to 5,047,171 kilos, and in 1911 to 17,288,972 kilos.

* * *

G. H. CARTLIDGE MADE VICE-PRESIDENT

George H. Cartlidge, Trenton, N. J., fifth vice-president of the National Brotherhood of Operative Potters, has been elected first vice-president, to succeed Frank H. Hutchins, also of Trenton, resigned, August 1, next, after holding the office for a period of 22 years. John T. Wood, East Liverpool, Ohio, was recently elected president of the organization.

* * *

NEW GOTHAM CHINA COMPANY

Pulver & Waldman, Inc., New York, N. Y., has been incorporated with a nominal capital of $5,000 to manufacture chinaware and kindred products. The incorporators are F. and S. Pulver, and L. Waldman. The company is represented by M. Gelles, 1140 Broadway, New York.

* * *

$2,000,000 CONSOLIDATION ON COAST

The Pacific Porcelain Ware Co. and the Pacific Sanitary Manufacturing Co., have consolidated under the name of the Pacific Sanitary Manufacturing Co. Their three plants in Richmond, Cal. are being consolidated and enlarged. The capital stock of the new company has been raised to $2,000,000, and it is expected very shortly to double capacity. The officers of the new company are N. W. Sterns, president; M. E. Wangenheim, vice-president; E. S. Wangenheim, second vice-president; Miss May Blum, secretary. Claire Cameron will continue in the management of the plant in North Richmond and W. A. Potter will be manager of the Barrett Avenue and San Pablo plants. The main offices will be at 67 New Montgomery, San Francisco.

⁂

FIRE DAMAGES TRENTON PLANT

Fire on the night of May 12 caused several thousand dollars damage to the plant of the Trenton (N. J.) Fire Clay & Porcelain Co., a J. L. Mott concern. The blaze is believed to have started from defective wiring and began in the first floor elevator shaft. Watchmen discovered the flames in the stockroom adjoining the shaft and gave the alarm. The fire quickly spread to the second and third stories, but was finally stamped out by the entire force of the city's fire department. Dense smoke hampered the firemen in reaching the flames. The loss is fully covered by insurance.

⁂

RECEIVER FOR GUERNSEY WARE CO.

J. Elliott Thompson, superintendent of the Cambridge (Ohio) Works of the American Sheet & Tinplate Co., has been appointed receiver of the Guernsey Ware Co. by Judge Charles Sturnbaugh in the common pleas court.

The company has a capital stock of $50,000 and Charles L. Casey owns all but ten shares of the common stock. Late Tuesday eleven banks filed a petition asking for the appointment of a receiver, alleging the pottery company owes them in the aggregate $10,000 and is otherwise indebted on accounts and bills payable in the sum of $50,000. In addition to this the company had $150,000 in preferred stock outstanding and was unable to meet the payroll amounting to $3,000.

⁂

GIVES EMPLOYES LIFE INSURANCE

The Old Bridge (N. J.) Enameled Brick & Tile Co., has inaugurated a plan of insurance among employes at the plant, providing for a death benefit for their families. Paying the premiums, the company has presented each employe of two years standing with insurance in an amount of $200; five years, $500; and ten years or more $1,000. The death claims in these sums are to be paid only after continuous employment with the company. About 125 employes are affected by the plan.

⁂

WILL CLOSE ON JULY 4

In an announcement to employes regarding the forthcoming holiday, the Thomas Maddock's Sons Co., Trenton, N. J., manufacturer of sanitary ware, says: "We are going to close down tight in all departments on July 4. We trust every one will plan to be on hand Monday, July 3, so that we will not lose more than one day's production that week. We are behind with our orders and every day counts."

⁂

MAKES STUDY OF FLUORSPAR INDUSTRY

R. B. Ladoo, mineral technologist of the Bureau of Mines, spent the entire month of April in the examination of the fluorspar deposits of the western states. On this trip fluorspar mines and mills were examined in New Mexico, Nevada and Colorado. Information obtainable on fluorspar deposits in Arizona, California and Utah indicated that deposits were not sufficiently important to warrant examination. None of the mines or mills visited were in operation, and it was evident that many of the deposits opened, particularly those of New Mexico, were war developments which cannot be considered of great importance under normal conditions. The information obtained on this trip will be used as the basis of a report on the mining of fluorspar in the western states.

⁂

FIRE DESTROYS ILLINOIS CHINA PLANT

According to a press dispatch, fire totally destroyed the Illinois China Co. plant at Lincoln, Ill. This plant was valued at $285,000, and the loss to the stockholders will be approximately $235,000, as the plant was insured for only $50,000.

⁂

ILLINOIS FLUORSPAR PLANT BUSY

The Hillside Mines Co., operating fluorspar properties near Rosiclare, Ill., is planning for extensive operations at its new spar mill recently completed. The plant has a capacity of 25 tons of ore per hour, single shift, and is electrically operated in the different departments. The structure is of steel frame type. It is said that this district is now the greatest producer of fluorspar in the world. G. H. Jones is president of the Hillside company, and formerly was first vice-president of the Inland Steel Co.

⁂

LIONS CLUB VISITS FELDSPAR COMPANY

The plant of the Trenton (N. J.) Flint & Spar Co. was visited by a large delegation of members of the Lions Club, following a local luncheon recently. The guests were conducted thru the establishment by Richard H. Wainford, and viewed many features of more than ordinary interest. The heavy stocks of raw material in the yards, the grinding and screening departments, and other parts of the plant were thrown open to inspection.

⁂

FORM TILE AND MANTEL COMPANY

A report informs us that the Watson Tile & Mantel Co. of Cleveland, Ohio, has been organized with $10,000 capital by Lawrence M. Rich and E. A. Watson.

⁂

BUILDING THIRD TUNNEL KILN

The Kalamazoo (Mich.) Sanitary Manufacturing Co. is planning the erection of a Harrop continuous car tunnel kiln. This kiln will be 360 feet long and will be fired by oil, using a low pressure system. A capacity of 672 pieces of bisque ware per day will be possible with the kiln. This will be the third kiln of this style in use on the plant.

⁂

FRONTENAC ADDS TO PLANT

The Frontenac Floor & Wall Tile Co., Ltd., Kingston, Ont., has commenced the erection of additions to its plant for extensive increases in production. The work will include two large kilns, which will be used for the most part for wall tile manufacture, developing a new feature of production. The company has recently installed a grinding plant for feldspar, bringing economies in this department. The plant expansion will be in charge of Everett Townsend, general manager, formerly connected with the Robertson Art Tile Co., Morrisville, Pa.

⁂

ADD POTTERY TO TRENTON FAMILY

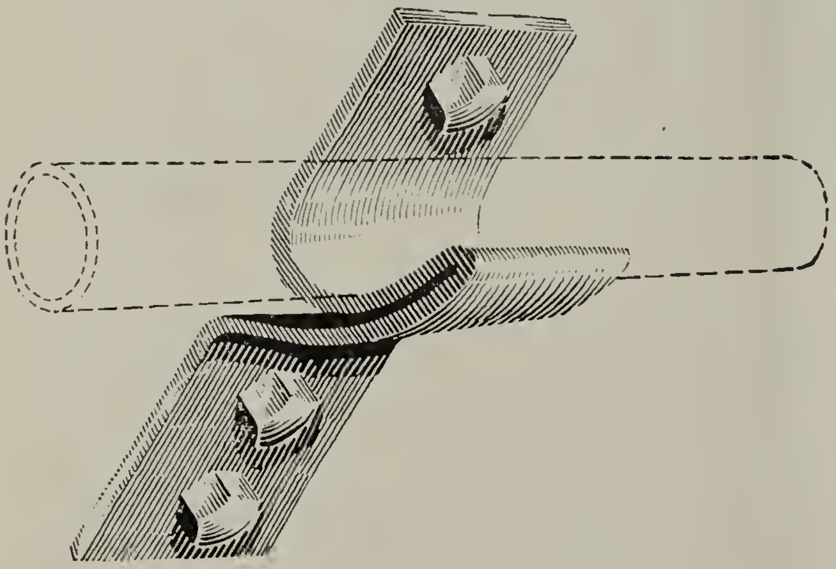
Among New Jersey charters granted during April was one to the Acme Pottery Works, Inc., of Trenton, dealers in pottery, and capitalized at $100,000. Noah W. Boch, Rahway, N. J., Anna H. Kennedy and Mae K. Hoffman, Morris Heights, Pa., head the organization.

The Superintendent

Helpful Hints for Practical Men Whose Problem is Maximum Production with Minimum Cost

AN EASILY MADE PIPE BRACKET

Strap iron, if bent into the shape shown in the accompanying illustration, makes a very serviceable and easily fashioned pipe bracket. The bracket is in one piece, with three or four bolt holes to permit fastening. It will very easily carry pipes up to six inches in diameter and probably larger, tho it is uncommon practice to carry pipes of greater size on such a bracket.—*William H. Watson in Power.*

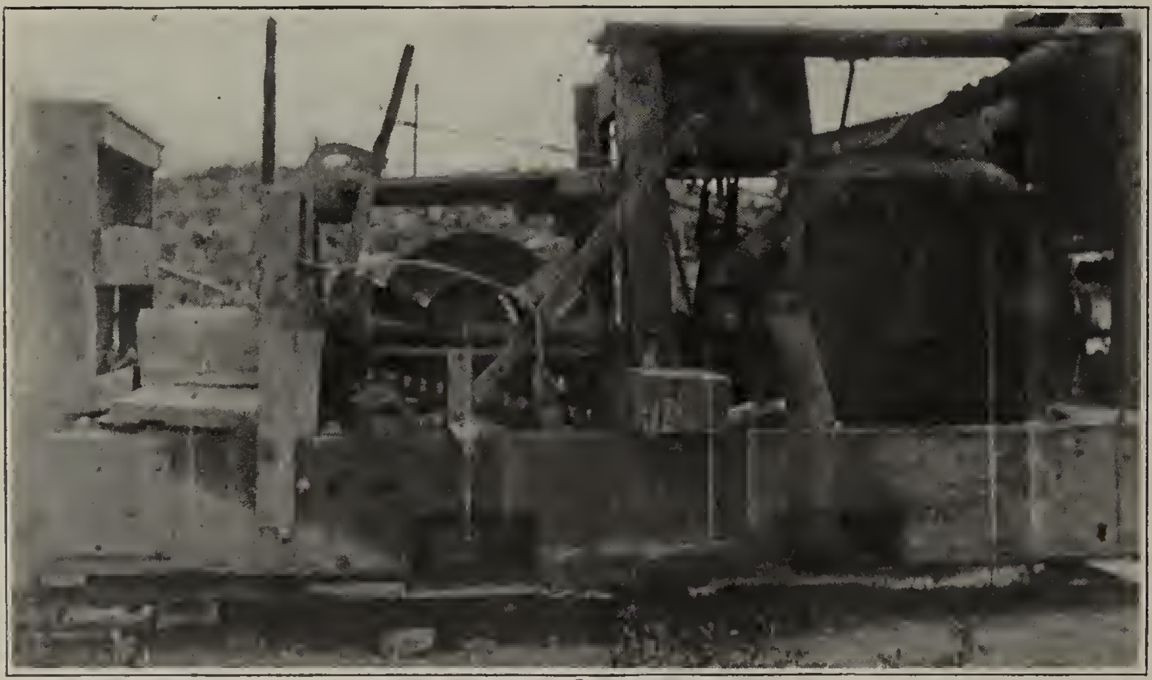


A Pipe Holder Made from Strap Iron.

⁂

A HOMEMADE GASOLINE LOCOMOTIVE

If a man is handy with tools and is mechanically inclined he can find many opportunities around a clay plant to make use of this ability and design certain features which will simplify a process or in some way aid in the plant operation.



A Close View of the Friction Drive Arrangement Which is the Feature of This Homemade Locomotive.

The accompanying two views show a homemade gasoline locomotive, which was built on the plant of the Ford Brick & Tile Co., Harrisburg, Ill. It was made simply by taking out the motor of an old Overland car, the engine of which was still in good operating condition, and placing this motor on a truck, and then by a series of gears and a friction drive, forming a locomotive.

A Homemade Gasoline Locomotive in Which an Old Automobile Engine is Put to Good Use.

The large view accompanying this article shows in the central part the friction drive, which is simply two beveled, cone-shaped pieces and these by means of gears and shafts transmit the power to the locomotive.

The homemade locomotive serves its purpose very well and is employed to haul two cars from the pit to the plant and to haul away the overburden to the spoil pile.

⁂

PLACES LARGE MACHINERY ORDER

An order of machinery including two nine-foot standard dry pans, two cup elevators, two screens, an auger machine, brick die, pug-mill with steel mounting, a disk plate feeder and an automatic cutter together with all necessary shafting, drop hangers, pulleys, collars and belting has been placed by the Vitrified Products Corporation of San Diego, Cal. This company has only recently received its charter and will begin manufacturing just as soon as the plant can be gotten in readiness. Its large clay deposits are located conveniently on the Santa Fe Railroad, just outside of San Diego. The company's dryer will be of the waste heat type, will have 12 tunnels, and will require the use of approximately 250 dryer cars.

Questions and Answers

Best Authorities in Every Clay
Working Branch Are Called Into
Consultation—Their Advice Is
Free to You, Thru These Columns

Address all communications intended for this department to "Editor Questions and Answers, care of Brick and Clay Record," Chicago

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CHANGING COLOR OF DRAIN TILE

1,048. *Missouri—We have a clay in our plant that burns to a light cream color, and will stand a temperature of over 2,400 deg. F. without showing any appreciable amount of shrinkage in burning. This light color in the finished ware is objectionable to most users of drain tile, as they have been educated to expect a red or brown colored tile. Do you know of anything that we might add to our clay mixture to give the finished ware a red or brown color?*

There are several materials that you might add to the clay that you are using at present for your drain tile in order to make them burn to a red color. We believe the most economical would be some surface clay that you could no doubt pick up on your property. Possibly ten per cent. of this mixture would produce a satisfactory color. It is also possible to darken the color by the addition of the same material as used in the mixture of red mortar color. This is known as mineral red or earth paint, and is practically the same as the main ingredient of mineral red paint. We believe, however, that the additional cost of manufacture with this material would be too prohibitive.

Another possible solution of your problem is to coat the tile after they are dry with a slip made of a regular slip clay as used by the manufacturers of jugs and stoneware. However, we also believe that the labor of dipping these tile would be too expensive for any additional returns that you would receive.

The American Society for Testing Materials has adopted standard definitions and methods of testing drain tile. These definitions and tests do not take into consideration the color of the tile. In other words, it is evidence that the color means nothing. We would suggest a possible way out of your difficulty would be to have your tile tested according to these standards, or provide the necessary equipment at your plant and test the tile yourselves. These definitions and tests appear in our Clay Products Cyclopedia.

With this information we believe that you would be able to persuade your customers that your tile come up to specifications and that the color has no bearing on the quality.

* * *

WANTS INFORMATION ON FIRE CLAY PLANT

1,049. *Ohio—I have a good vein of number two fire clay and I am considering the advisability of erecting a plant for the manufacture of ground clay. Can you give me information as to the market for this product? I would also like to know the approximate cost of a small plant, and the market price per ton of the clay.*

In answer to this correspondent, Paul Bechtner of Ottawa, Ill., has the following to say:

Ground clay in the Illinois district is now selling for about $1.70 to $1.90 f.o.b plant. Most of the plants use a screen of 16 mesh. Previous to 1914 the price of Ohio clays was lower than Illinois, partly because there are more producers and more competition."

D. A. Moulton, ceramic department, Iowa State College, Ames, Ia., offers some good advice:

DISPLACES SIX MEN
also Gets a Better Mixture

This is what the Bay City Excavator is doing in the Ford Brick & Tile Plant at Harrisburg, Ill.

Before the installation of the excavator at this plant, ten men were employed in the pit to dig the raw clay. With the Bay City Excavator they are now using only four men to do this work, having a capacity considerably *over* the requirements of the plant, "35,000 brick daily."

The Excavator is only operated *part* time. Fuel consumption is exceedingly low, using but seven to eight gallons of gasoline, and a small quantity of oil daily.

The installation is a very profitable one for the Ford Brick & Tile Co. It would also be for you.

Write for full details

The Bay City Dredge Works
Bay City, Mich.

**If you can
Save money
Save time
Save trouble**
as others have, by using FAIRFIELD Coal Handling Machinery
Why not write for more information?

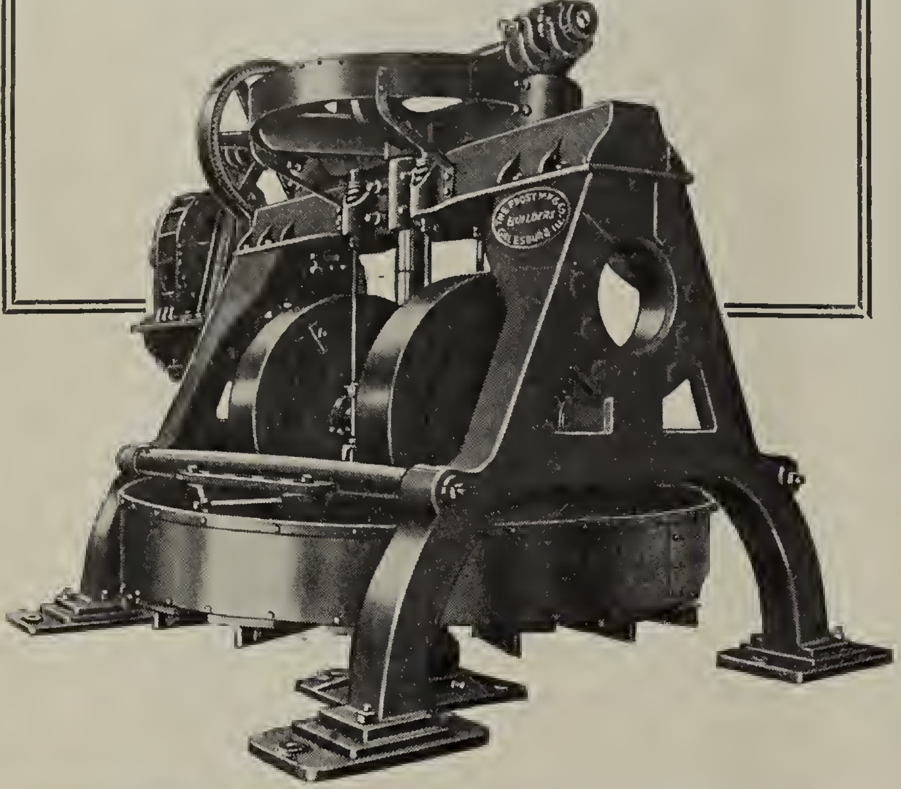
One man with FAIRFIELD can unload more coal than 20 men by hand.

THE FAIRFIELD ENGINEERING CO.
LANCASTER, OHIO

BETTER QUALITY WARE

That is the result when Frost
Dry Pans are put on the job.

THE FROST MFG. CO.
GALESBURG, ILLINOIS



QUALITY ECONOMY SERVICE

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Kiln Banding

It will pay you to take advantage of our ten years' experience, and at least let us quote our prices.

Gallagher Brothers Kiln Banding is quality made and produced.

Inquire today

Gallagher Brothers
Uhrichsville, Ohio

"There are at present two plants in your correspondent's city which are shipping dry milled clay. There is a good field open for a good fire clay mortar. Your subscriber can obtain bats from one of the companies in his district to be used as grog to be mixed with his clay for mortar. Broken saggers from the potteries can be used for the same purpose. In some cases starch or sodium carbonate is added to the clay, the first in order to harden the mortar so that it will carry the load of the brickwork before the heat is applied, and the second to float the inert grog. The latter material, however, reduces the refractoriness of the mortar. Some mixtures of this type classed as high temperature cements sell for $70 and $75 a ton. The ordinary ground fire clay is usually priced at from $6 to $7 a ton."

The prices of construction of a plant have varied so much during the last few years that we do not feel that an estimate based on the meager information that you have given us would be very valuable. However, we feel that a plant of 100 tons capacity per day, which we believe is the minimum that you should figure on, would cost in the neighborhood of $10,000. If you wish to give us the layout of your property and other data we might be able to give you a more constructive estimate on this feature.

⁂

WANTS INFORMATION ON EASTVALE BRICK

One of our subscribers from Syracuse, N. Y. is seeking information regarding Eastvale face brick. This name was found stamped on several face brick, but the manufacturer could not be located. If any of the readers of Brick and Clay Record know what plant manufactures Eastvale brick we would be very glad to get the information.

In the Wake of the News

Being Brief Mention of a Host
of Interesting Happenings in the
Varied Fields of Clayworking

F. P. STILES SUCCUMBS TO ILLNESS

Frank P. Stiles, a prominent brick manufacturer of New Haven, Conn., died after a sudden illness a short time ago. It was hoped that an operation would save his life but he did not survive it.

JOHN S. CRAIG DIES

John S. Craig, 76 years old, a pioneer resident of Bates County and formerly an extensive manufacturer of brick in Rich Hill, Mo., died at his home there after a lingering illness. Mr. Craig took a lively interest in public affairs while a resident of Rich Hill and at different times served as township clerk, assessor, member of the board of education and member of the city council. He is survived by his widow and four children.

ESCAPES DEATH BUT LOSES CLOTHES

William Schultz, an employe at one of the Western Brick Co.'s plants, was recently the victim of a unique accident and a miraculous escape from death. Schultz was employed in the engine room when his clothing caught on the end of a rapidly revolving shaft. He was in imminent danger of being whirled to death, but fought against being drawn around the shaft, and managed to escape after all of his clothes had been torn from him. He was seriously hurt, his body being badly bruised and lacerated.

HARRY KRAMER RECOVERS FROM ILLNESS

Harry Kramer, of Lexington, Ky., formerly active manager of the Lexington Brick Co., after an illness of some months of rheumatism, has recovered. Mr. Kramer was recently in Louisville, reported that he felt fine and looked it.

The Lexington Brick Co., which has been in receivership, has recently been sold by the receiver according to reports received here, but details of the sale have not been learned.

DEATH OF HARRY J. HIRSCH

Colonel Harry J. Hirsch, aged 65, retired former quartermaster at the Columbus, Ohio, barracks for years, died at his home, 80 North Twentieth Street. He was elected president of the Columbus Brick & Terra Cotta Co., a concern which has a plant at Union Furnace, Ohio, which has been idle for about five years. Colonel Hirsch was elected president of the company at a stockholders' meeting about a month ago. He married Katherine Kilbourne, a daughter of the late Lincoln Kilbourne, the principal owner in the plant.

HAS NARROW ESCAPE FROM DEATH

Edwin Berry, a driver of a large truck for the Fulton (Mo.) Fire Brick Co., had a hair raising experience and a narrow escape from death, when the truck he was driving plunged into the deep water at the abandoned pit of the company in Fulton. The accident occurred when a front tire blew out and the truck lunged to the side of the road, straight into the water which was 20 feet deep at that point. Berry was caught under the steering wheel and went down with the machine. By rare good fortune he was able to scramble from under the wheel as the truck was turning over and he came back to the surface of the water uninjured, with the exception of a couple of cuts on his head. The truck was submerged and later was gotten out by a force of men from the plant.

TRANSFERS PLANT TO NEW ORLEANS

Enos Baldwin has moved his roofing tile plant, known as the Baldwin Petrinite Roof Tile Co., from Mobile, Ala., to New Orleans. Mr. Baldwin is of the opinion that his red, green and gray tiles fit in with the climate and the Spanish and French architecture of the Louisiana city. Three machines for making French tiles and one for Spanish tiles are in operation at his plant at Tchoupitoulas and Arabella Streets, with a combined capacity of 1,200 tiles per day.

BIRMINGHAM PLANTS ALL BUSY

Practically all of the brick manufacturing plants in Birmingham, Ala., and in the Birmingham district are being operated on full time. There is a steady demand for Birmingham made brick all over the south. These brick are going into new structures in the states of Alabama, Mississippi, Georgia, Louisiana and others. Owing to building activities in the Birmingham district many thousand of Birmingham made brick are now going into various kinds of buildings which are being constructed here.

BRICKLAYERS' SCHOOL IN ALABAMA

Tuskegee Institute at the town of the same name in Alabama is one of the educational institutions of this country where a real effort is made for equipping the student for practical success in life, says a recent issue of the American Clay Magazine. One of the important subjects taught at this school is bricklaying and some of the largest classes in the mechanical department have been enrolled in this trade. As laid out, the division of brick masonry includes tile setting, plastering and bricklaying. The course covers three years, and is intended to provide a thoro education in the art of bricklaying and plaster-

Doing Wonders With Common Sense!

In most every clay plant regardless of size or capacity, there is room for changes which will effect better economy.

Waller Crow Engineers have aided clay plant operators to reduce their cost in this way; the application of common sense.

Don't buy heavy priced machinery before you consult us. It may not be necessary to make a purchase.

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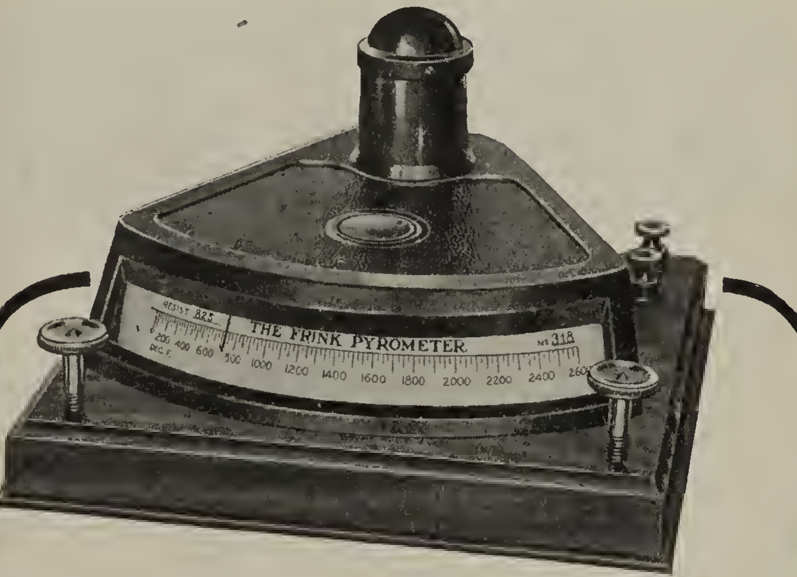


The FRINK Pyrometer

After long experience and effort we have succeeded in bringing into use an exceptionally sensitive but exceedingly hardy instrument; an instrument free from tedious adjustments and equal to any occasion. The advent of this instrument, together with our maintenance of our guaranteed service, have been responsible for our phenomenal success.

WRITE US TODAY

The Frink Pyrometer Company
LANCASTER, OHIO

BRISTOL'S PYROMETERS

Will Do Much Toward Helping You Make 100% Burns —

Because —

BRISTOL'S enable you to know at all times the temperatures of your kilns. They enable you to maintain even temperatures which are necessary to cut out waste and cracked ware. Competition is keen. Quality ware is in demand.

Eliminate guess work by installing BRISTOL'S Pyrometers. They accurately indicate and record temperatures up to 3,000 deg. Fahr.

Their rugged and simple construction and their scientific principles, make possible their use in all conditions.

Let us send you AE 291 today

The Bristol Company
Waterbury Conn.

STEVENSON

DRY PANS
WET PANS
ROLL CRUSHERS
SEWER PIPE PRESSES
SEWER PIPE TURNERS
TILE PRESSES
PRESS FEEDERS
CRUSHER FEEDERS
PAN FEEDERS
BUCKET ELEVATORS
GRAVITY ELEVATORS
BRICK BARROWS
TILE BARROWS
SEWER-PIPE BARROWS
GIGS
ETC.

Western Sales & Engr. Office
801-802 Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

THE STEVENSON CO.
Wellsville Ohio

ing, both in theory and practice. Educational work of this character is extremely important and should be promoted wherever and whenever possible.

BUILDING SERVICE FOR HOME BUILDERS NETS SALES

The Brick Selling Co., wholesale brick dealer, of Birmingham, Ala., is offering the public a free building service as an advertisement and a further inducement to people to use brick in building homes.

The firm is inserting in the local papers half page advertisements announcing an arrangement whereby architects will furnish all the plans and specifications for houses they suggest at rock bottom price.

The service is being called "A Building for Home Builders." It includes hundreds of pictures and floor plans of modern face brick bungalows and small houses, from three to eight rooms. Plans of these houses are the work of architects who are specialists in building homes economically. Thru the use of stock items and standard dimensions, the dealer states, waste has practically been eliminated.

Special attention has been given to make the houses attractive, give them architectural merit, produce beautiful, interesting and dignified interiors with all modern conveniences.

L. L. Stephenson, of Birmingham, is president of the company, John W. Sibley, vice-president, and Thomas W. Sims, secretary-treasurer and general manager.

"We are also getting out in connection with our intensive advertising campaign the little booklet called the 'Story of Brick' which gives all of the selling points in favor of the brick house," stated Mr. Sims. "These booklets are being given to all of the customers who come into our place and mailed to all who are contemplating building houses.

"The plan has brought in a shower of inquiries since the 15th of March, when it was started. A steady stream of interested people have filed thru our place of business and not a few substantial orders have been the result."

LARGEST PHOENIX BRICK ORDER PLACED

The W. D. Northern Contracting Co., of Phoenix, Ariz., has just made the largest single purchase of brick ever made in Phoenix, and from a Phoenix Brick company. The contracting company purchased an entire kiln, nearly 1,300,000 brick, and will sort the brick themselves. 90 per cent. of the brick are a cream buff, an excellent color for face brick, and suited to the climate. The brick are of exceedingly fine quality, and the transaction is considered as marking a new era in the brick production of Phoenix.

OPEN RED BLUFF PLANT

O'Connor Bros., contractors and builders of Red Bluff, Cal., are reopening their brick plant near that place, in anticipation of an active period of building just ahead.

OPENS NEW CLAY PIT

George A. Clarke has opened a new clay bank near Porterville, Cal., and is shipping to Craycroft & McKnight in Fresno, who are manufacturing tile and brick.

REORGANIZE REFRACTORIES COMPANY

The U. S. Refractory Brick Co., San Luis Obispo, Cal., has been reorganized with a capital of $100,000 and will soon begin the building of a very large plant at that place.

EXHIBITS IN CHAMBER OF COMMERCE

The Richmond (Cal.) Pressed Brick Co. is featuring a fine display of its products in the rooms of the builder's exchange at Richmond. The city is in the full swing of a great wave of building.

NEW CALIFORNIA COMPANY ORGANIZED

Rio Oso (Cal.) Brick Co. in Sutter County, has been organized to manufacture and deal in brick, it is reported The capital stock is given as $10,000, of which $2,500 has been subscribed by William Ensele, Myrtle Harder and Alma Greenwald.

BUSINESS BETTER THAN LAST YEAR

The Stockton (Cal.) Fire Brick Co. states that business is fair, a little, not much better than last year. As the company manufactures only fire brick, and deals exclusively with large corporations, factories, and so forth, the trade naturally follows the activities of these companies.

ISSUES 12,000 SHARES OF STOCK

The Steiger Clay Products Co., Vallejo, Cal., has been granted permission by the State Corportation department to issue 6,000 shares of preferred stock and 6,000 shares of common stock, to be sold in equal amounts, and providing that 1,500 units thereof must be sold by September 1, and must net the company at least 85 per cent.

UNABLE TO TAKE CARE OF DEMAND

Dinuba, Cal., is complaining bitterly of the lack of brick. About $200,000 worth of building is being delayed for this reason. This city has depended on the brick plant of Exeter for its supply, and contracts have been made, based on the cost of brick from this near-by point. Brick are obtained at times from Oakland, Fresno and Bakersfield, but not in large enough quantities. On account of the high price of labor, the yards did not manufacture enough to carry over this spring, and began their summer's output a little late. As a result, the sudden great demand cannot be met. Besides the Dinuba buildings, the Exeter plant must supply brick for high schools in the near-by towns of Porterville, Reedly, and Taft. D. J. Evans, of Bakersfield, has been investigating the outlook for the establishment of a new plant at Dinuba.

ESTABLISHES BRICKLAYERS' SCHOOL

Oakland, Cal., is taking time by the forelock. This city has just ahead of it great building projects. Brick contractors estimated that within a short time they would need 200 expert bricklayers. There are in the territory but 80 expert bricklayers. So the industrial relations committee of the Chamber of Commerce has opened a school for bricklayers, under the supervision of Peter Hanson, who laid brick in Denmark nearly 50 years ago. No tuition will be charged, and it is estimated it will be possible, under intensive training, to turn out within six months as many as 50 experts. The shortage of bricklayers in that section is due to the fact that there have been but three bricklayer's apprentices in the past seven years. The brick for the use of the school will be furnished free by the McNear Brick Co. and the Remillard Brick Co. All graduates of the school are guaranteed steady employment. Some time since, to fill a shortage a plasterers' school was operated with very satisfactory results.

SHIP BRICK IN PASTEBOARD CARTONS

The Los Angeles (Cal.) Pressed Brick Co. is a firm believer in the efficacy and economy of the most modern, improved methods of operating every department of the business. The latest innovation at this plant is the use of individual pasteboard cartons for packing fine grades of brick for shipment. An order for 1,000,000 of these cartons

Electric Motors and Generators

for all requirements of the

Brick and Clay Industry

BURKE ELECTRIC CO.
MAIN OFFICE AND WORKS
ERIE PENNSYLVANIA

Service-Sales Offices
NEW YORK CLEVELAND PHILADELPHIA
PITTSBURGH DETROIT BUFFALO

Sales Agencies
CINCINNATI: UNDERWOOD ELECTRIC CO.
KANSAS CITY: W. T. OSBORN

Analyses of the Coal and Clay Found Along the Line of the P. L. & W. R. R.

Coal—No. 6		Clay—No. 3	
Water	2.200	Silica	59.84
Volatile Matter	35.540	Alumina	25.96
		Iron Oxide	1.68
		Titanium Oxide	1.60
Fixed Carbon	54.705	Magnesium Oxide	1.08
Sulphur	1.725	Sulphuric Anhydride	Trace
Ash	5.830	Alkali Oxides	1.22
		Fusion Point	3020° F.

This territory is only 40 miles from Pittsburgh and the P. L. & W. R. R. connects with both the Pennsylvania and Erie Systems.

Write today for full particulars.

The Pittsburgh, Lisbon & Western R. R. Co.
Lisbon, Ohio

Russell
TUNNEL KILN

Preventing
Avoidable Waste

By its continuous operation the Russell Tunnel Kiln (Zwermann Patent) saves fuel and time otherwise lost in heating up and cooling down.

By its semi-mechanical performance, it saves labor and breakage from handling saggers and ware.

By its sturdy build, it saves repair and renewal expenses.

Write for book, MODERN FIRING

RUSSELL ENGINEERING CO.
Railway Exchange Bldg., St. Louis, Mo.

E-356

HY-GRADE MANGANESE CO.
WOODSTOCK, VA.

Miner
and
Grinders

**Especially Prepared
for Brick Making**

Sales Office: CHARLESTON, W. VA.

has recently been placed with a local box company. These containers prevent a considerable loss from chipping and breaking, and the company believes that this saving equalizes the higher cost of shipping in this fashion.

This concern has been an important factor in the development of southern California clays, and is noted for the production of brick of unusual color and texture. They have just added to their extensive holdings by the purchase of clay property in San Diego County, from which they expect to make brick of entirely different appearance than any of their present line.

BUILDS BUSINESS THRU ADVERTISING

It is refreshing to run across a live wire in the clay industry, one who thoroly believes in his products. Such a one is J. Y. Parker, of Santa Barbara, Cal. Of course Santa Barbara is not a San Francisco. But it is the home of J. Y. Parker and his brick plant, and he has sold to his fellow-townsmen the idea of brick and tile. When they think of building, they think "brick and tile." He explains in the local press how his product is made and why it is necessarily superior. After elaborating his argument, he gives 15 terse clinching reasons why hollow tile should be preferred, featuring especially its fireproof qualities. Does it pay? Mr. Parker in 1916 purchased the property of the Grant Brick & Tile Co. when the business was at its lowest ebb. He spent several years building the plant into the condition he desired.

Starting with a 200 foot frontage, he now uses 500 feet. His daily brick output has increased 50 per cent., his tile output 266⅔ per cent., his number of drying sheds 50 per cent. Just recently he has furnished large quantities of tile for the San Marcos, Santa Barbara's first modern office building. Into the County National Bank, the Lincoln and Wilson schools, the St. Francis and Cottage hospitals and a long list of private dwellings have recently gone a large percentage of brick and tile from the Parker yards. 700,000 tiles have been placed in the past few months, and the plant is running at capacity, and J. Y. Parker always has news to tell. "He tells his business that he may do business."

MUST HAVE BEEN A SOFT MUD BRICK

A five and one-half pound brick dropped by workmen from a building—at Pueblo, Colo.—under construction, at a point one hundred feet above the ground struck R. E. Devoss, a white laborer, on the head. The brick was smashed, Devoss laughed and shaking his head continued to work.

START FIRST COLORADO TUNNEL KILN

The Boulder (Colo.) Clay Products Co. has turned out its first lot of brick, which are fully up to expectations, according to Manager G. W. Buckles. The brick are rough face, and burn to a rich red color. The output of the plant has been sold for some time ahead, and deliveries will be made as the brick are finished. The kiln at the Boulder plant represents a new departure in manufacturing brick in Colorado, being of the tunnel type, whereas the round down-draft kiln is commonly in use in this state.

BUSINESS MEN VISIT DENVER PLANT

The Denver Terra Cotta Co. extended an invitation to the Denver Civic & Commercial Association to visit its plant. 125 members accepted and after the happy repast of an excellent box lunch, every maneuver from mud to brick, tile and so forth, was fully explained.

George P. Facht, vice-president of the company, addressed the visitors and during his talk he mentioned that there were 240 men employed in manufacturing all kinds of tile and brick. The annual output is estimated at $500,000.

RECEIVER TO OPERATE CARBO PLANT

Following a decision by the Superior Court, Receiver William S. Hyde will continue the manufacture of brick at the plant of the Carbo Brick Co., Berlin, Conn. He has been authorized to borrow $5,000 to finance the continuation of the business.

NEW HAVEN PERMITS IDEAL WALL

The Board of Aldermen, New Haven, Conn., has passed an ordinance permitting the use of brick walls of "Ideal" type for dwelling houses and garage construction in the city. This allows the application of plaster direct to the brickwork, without the use of furring or lath. By this method of construction, a dwelling or garage can be built of brick at no greater cost than with wood, or other non-fireproof material.

TUTTLE BUYS PLANT

The Tuttle Brick Co. of Newfield, Conn. has purchased the brick plant and business of James C. Lincoln of Newfield. It is said the purchase price was in the vicinity of $60,000. The transfer includes some 75 acres of land, two cottages, boarding house, tenement house, kilns, brick making machinery, electric shovel, racks, pallets and other equipment. According to the Tuttle company, about 50 additional men will be employed at the Lincoln plant. The Tuttle company was established in 1842 and incorporated in 1896. It ships brick to points in Connecticut, Massachusetts and Rhode Island.

DEVELOPS CHRISTIANA'S CLAY DEPOSIT

Christiana, Del., bids fair to regain some of its former industrial activity for which it was noted years ago by the establishment about a year and a half ago of the Christiana Clay Products Co. This concern was organized by T. Duncan Just, who spent his boyhood days in Delaware, and later returned to develop the real riches of the land on the Christiana River. Hundreds of acres of fire clay are distributed about the locality, from which brick of excellent quality can be manufactured. The company makes a specialty of Christiana Colonials, which resemble the ancient brick used in the old New England homes. Capacity is 50,000 per day. Shipments are made by water, rail and truck. Officers of the Christiana Clay Products Co. are T. Duncan Just, president; Benjamin A. Groves, treasurer; Richard W. Cook, William J. Highfield, John Richards and John Johnson, board of directors.

WASHING GEORGIA CLAYS GREAT AID

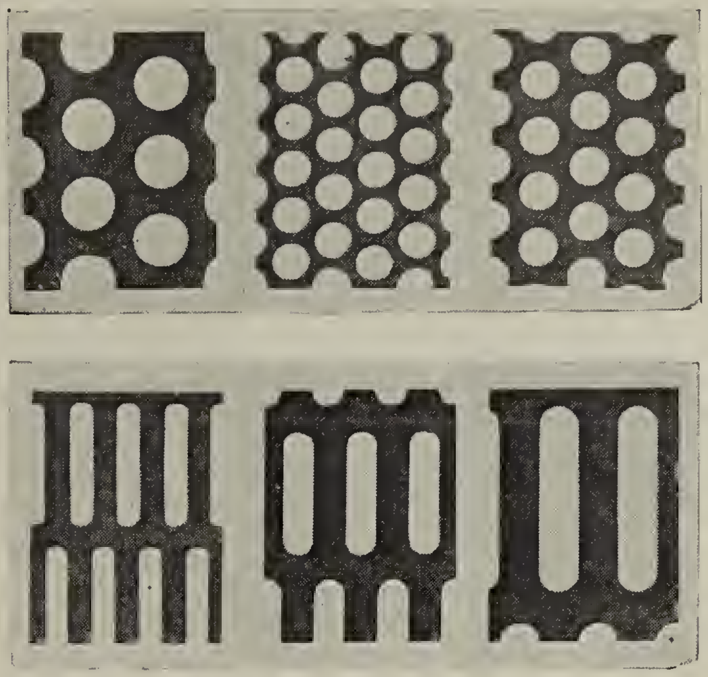
Washing tests of Georgia clays have been completed at Columbus, Ohio, by the Bureau of Mines. Samples of bauxitic and refractory clays have been calcined to cone 13, ground to pass ten mesh and mixed with 40 per cent. raw clay. Samples of commercial size brick have been completed by the dry press process. When made up into a standard pottery body this clay showed none of the objectional specks common to unwashed Georgia clays and was of a good color.

SOUTHERN MANUFACTURERS BUSY

The advertising campaigns of the American Face Brick Association and the Common Brick Manufacturers' Association, according to manufacturers in the Atlanta, Ga., district, is bearing excellent fruits thruout the South as it is in all other parts of the country, with the result that there is an unusually good demand for brick at this time. The industry in the southern territory is operating as a whole at nearer to capacity than it has in the past two years.

As a result of this demand many of the plants are running

Perforated Steel Screens



For Screening Clay, Shale, Sand, Gravel, Stone and Cement

All sizes and shapes of holes in metal of proper thicknesses to give the best screening results.
Sheets furnished flat or rolled to shape for revolving screens.

THE HARRINGTON & KING PERFORATING CO.
635 N. Union Ave., Chicago, Ill.
NEW YORK OFFICE: 114 Liberty St.

WOULD YOU LIKE TO MAKE BETTER BRICK
?

USE R. & H. PRECIPITATE CARBONATE OF BARIUM TO PREVENT SCUMMING AND THEREBY PRODUCING BRICK THAT ARE RICHER AND DEEPER IN COLOR, CLEANER AND CLEARER IN APPEARANCE.

IF YOU ARE TROUBLED WITH SCUMMING, WRITE US TODAY FOR CIRCULAR.

THE
ROESSLER & HASSLACHER CHEMICAL CO.,
NEW YORK

Chicago Trenton Kansas City
Boston New Orleans Cleveland
Philadelphia Pittsburgh San Francisco

"Sturtevant Drying Systems
Are Economical, Efficient, and Sure"

We maintain a special organization of competent engineers experienced in drying work, as well as a Research Laboratory for conducting investigations to determine correct and economical temperatures, humidities, and velocities of air for the successful drying of your product. We are prepared to furnish complete drying machines, trucks, and trays.

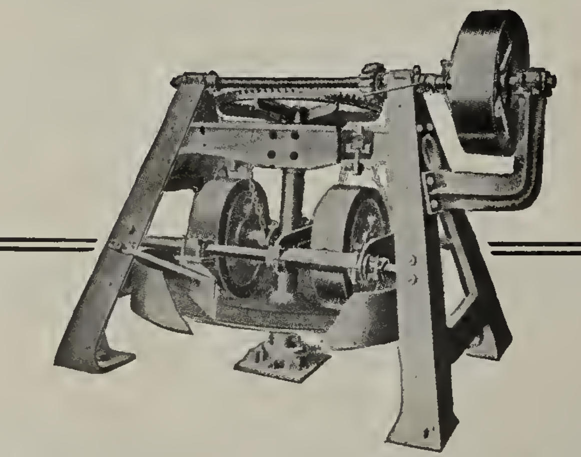
Our recommendations for your particular problem would not obligate you in any way.

B. F. STURTEVANT CO.
Hyde Park, Boston, Mass.
Offices in all principal cities.

EAGLE DRY PANS
MAKE GOOD

For continuous operation in clay plants — where a dependable heavy duty dry pan is necessary — where economy of repair and operation is important, the EAGLE Dry Pans are very desirable.

Write for full information



EAGLE IRON WORKS
DES MOINES, IOWA

short of stock and prices the past two months have been steadily upward, taking a five per cent. advance early in June, following a similar increase a month before. Heavy freight rates still are having a serious effect on the brick situation, but most of the manufacturers are confident there will be considerable improvement when the promised freight rate reductions go into effect within the next few weeks.

SCHERNEKAU SELLS DRAIN TILE PLANT

The Schernekau Brothers Drain Tile Works at West Salem, Ill., has been sold to Shoultz & Libke. Both these men are located at West Salem.

INSTALLS ELECTRIC CENTRIFUGAL PUMP

An electrically driven centrifugal pump has been installed at the plant of the West Salem (Ill.) Hollow Brick & Tile Co. This pump will take care of the water which accumulates in the clay pit. One mile of electric line has also been put in operation.

ORGANIZE $300,000 CHINA COMPANY

Organization of a $300,000 company and plans for a plant for the manufacture of chinaware were announced in Uhrichsville, Ohio.

The plant is to be located on a farm near the city of Newport. 50 business men are behind the project. Clay will be obtained on the Morrison farm, where it has been shipped for many months to nearby pottery centers.

FINANCE THE HOMES FOR 2,444 FAMILIES

Loans on bonds and mortgages amounting to over $10,000,000 were authorized by the Metropolitan Life Insurance Co. of New York on June 10. Of this amount more than 6⅓ million dollars will be devoted to housing, says the Chicago Trust Co., which is handling the loans to home builders in Illinois, Wisconsin and northern Indiana. The Real Estate Loan Department of this bank has aided in the financing of 1,074 houses and apartments sheltering 1,370 families.

M. E. GATES FORMS NEW COMPANY

The Clay Service Corporation, an organization formed to deal in clay and products thereof, and to manufacture specialized clay machinery, stokers and so forth, has been formed in Chicago, Ill. The capital consists of 1,000 shares of no par value. M. E. Gates, formerly of the American Terra Cotta & Ceramic Co., Justus C. Chancellor and Justus Chancellor, Jr., are the incorporators. Thornton & Chancellor, 1014 South Michigan Boulevard, is correspondent.

TERRE HAUTE COMPANY SOLD

All real estate, buildings, machinery and equipment of the Terre Haute (Ind.) Vitrified Brick Co. have been sold to John R. Root, according to a report filed by William K. Hamilton, receiver. The consideration was $75,000.

TERRE HAUTE SHIPS TO SUMMITVILLE

Perhaps for the first time in 40 years a car load of tile was shipped into Summitville, Ind., recently for use there. Since the tile factories in Summitville have been idle for so long, it was found necessary to draw on the Terre Haute plant of the National Drain Tile Co. for a car.

C. I. & W. PURCHASES BRAZIL R. R. STRIP

The purchase of a portion of the Chicago & Eastern Illinois railroad property in Indiana, which recently was ordered abandoned by the Interstate Commerce Commission by the Cincinnati, Indianapolis & Western railroad, has been announced. The company purchased that part of the road between Brazil, Ind., and West Union, Ind. The purchase however, is made subject to the approval of the Interstate Commerce Commission. The road was bought under a receivership sale authorized by a federal court. The sale, in case it is approved, will settle the problem of the clay companies between those two points which have been up in the air for months concerning how to ship their products. Virtually every plant along the route has only the one railroad connection with the outside world. In case the road finally was abandoned it would have meant irreparable loss to these plants. For some time, since the discontinuance of service by the C. & E. I. road, the C. I. & W. has maintained a freight service to these plants, making a junction with its own road west of Montezuma. It was pretty well established that in case no other road took over this stretch of track, the clay companies themselves intended purchasing the right-of-way and sufficient equipment to make their deliveries to main line roads.

ROAD SIGNS ADVERTISE PRODUCT

Present indications are that the fall trade will be good, says F. F. Carhart, of the Sheffield (Ia.) Tile Co. This company has increased its pugging capacity 100 per cent. and replaced a set of disintegrators and smooth rolls with conical rolls, improving the ware greatly. Some advertising is done locally in the shape of large road signs which are placed in prominent positions on Jefferson highway near the company's plants.

PUBLISHES EXCELLENT CATALOG

A new catalog has been prepared by the Adel (Ia.) Clay Products Co. and is now ready for distribution. It is really more than a catalog, and could appropriately be called a plan book, as it contains plans of all types of hollow tile farm buildings which have been the results of years of engineering experience, practical experiments and tests by the Adel Co. This company maintains a large demonstration farm at Adel, where all types of farm buildings constructed of hollow tile have been built, tried out and the best designs determined. After a careful study of these buildings while in use, the plans were standardized and embodied in the new catalog. The company states that this book is only the beginning of more standardized plans that are to follow.

ASHLAND, KY. TO HAVE NEW PLANT

The Pittsburgh Brick & Tile Co., of Ashland, Ky., capital $200,000, has been chartered by W. L. Bybee, A. C. Bailey and S. S. Willis. Ashland is becoming a larger brick center, being now an especially large producer of fire clay brick and products.

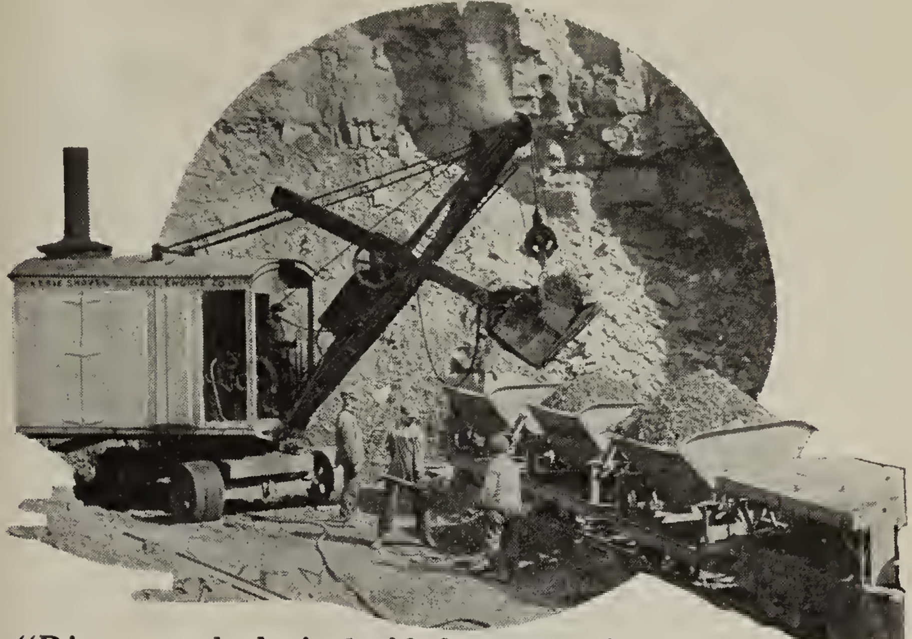
LOUISVILLE CLAY AND COAL PRICES

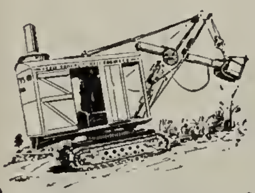
The average prices of brick and hollow tile in Louisville show common brick at $18 delivered and $15 on board cars at plant; with face at $30 delivered; and $26.50 on board cars. Hollow tile is quoted at 50 per cent. off list where delivered and 60 per cent. off on board cars. However, with the coal market high as it now is and surplus stocks running low, there is every reason to believe that an advance of $1.50 a thousand in brick and a dollar a ton on tile is likely to become effective at an early date. It is reported that Indiana producers in some instances have advanced prices due to increased coal prices.

Coal prices are ranging from $3.25 to $3.50 on Eastern Kentucky mine run to $3.75 and $3.85 a ton for Western Kentucky coal at mine, which represents quite an increase over prices of from $1.40 to $2 in effect prior to the coal strike.

PURINGTON LEASES EAST DOVER PLANT

The Horace Purington Co., of Waterville, Me., has leased





"Digs our shale in half the time—"
writes *Emmett Poston, Mgr. Poston Brick Co., Springfield, Ill.*

"With 5 men, the ERIE gives us plenty of shale to keep our plant running full capacity, and does a day's work of 11 men in 5 hours. And it has reduced our dynamite costs 90%. The ERIE has certainly proven a sound investment for tough shale digging."

Savings like these will increase your profits—and the ERIE'S steady reliability will assure you raw material whenever needed. The ERIE is built much stronger than other shovels of its size. Upkeep expense is negligible.

We would like to send you a bulletin full of facts and photos, showing just what the ERIE can do in getting out your clay and shale. Write for Bulletin B-16.

ERIE Shovels can be had with broad tired traction wheels, standard gauge car wheels, or on the ERIE caterpillar type mounting. All interchangeable on the same truck frame.

ERIE STEAM SHOVEL CO.
Formerly Ball Engine Co., Erie, Pa., U. S. A.
Builders of ERIE Steam Shovels
and Locomotive Cranes

ERIE Revolving Shovels

ERIE Steam Shovel Co Erie Pa.

Big Savings Follow in the Route of the Rust Special

Features of economy and big savings follow in the path of the Marion Rust Special Feeder Mixer. Clay products manufacturers realize increased efficiency in profit wherever this machine is installed.

Write for complete data

**MARION MACHINE FDY.
& SUPPLY CO.**
P. O. Box 395
Marion, Ind.

ATLANTA, GA. BALTIMORE, MD. BOSTON DETRO

PITTSBURGH, PA PHILADELPHIA MONTREAL MINNEAPOLIS NEW YORK CITY

SAN FRANCISCO ST LOUIS, MO. TORONTO WINNIPEG, MAN

MORSE Silent Chain Drives are 98.6% efficient for small or large drives. No worry about belt trouble, slippage of power and loss of production where Morse Chain Drives are installed.

Write us if you have a transmission problem. We give engineering service without any obligation.

Drop a Card to the Nearest Morse Engineer

MORSE CHAIN CO.

Largest Manufacturers of Silent Chains in the World

ITHACA, NEW YORK

CHARLOTTE, N. C. CHICAGO CLEVELAND KANSAS CITY, MO.

SPEEDING THEM UP!!

PRODUCTION INCREASED
LOSSES ELIMINATED
ON PRESENT EQUIPMENT

Write for details

ASH & PFUND

Consulting Engineers to the Clay Industry.
Investigations—Reports—Design—Construction
422 Court Ave., Des Moines, Iowa

the brick plant at East Dover and will manufacture brick there for the next few months.

LEASE SNOWHILL BRICK PLANT

The plant of the Snowhill (Md.) Brick Co. has been leased, it is reported, by William F. Johnson and A. J. Laurenson, both of Norfolk, Va. A number of improvements will be made and operations begun at an early date.

INCORPORATE NEW FIRE BRICK COMPANY

The Christy Fire Brick Co. of St. Louis, Mo., has filed incorporation papers at Jefferson City, showing a capital stock of $2,000. The company will mine, manufacture and deal in fire clays, brick, tile, pipe and other minerals. The shareholders are C. M. Christy, M. A. Christy and L. W. Christy.

COAL PRICES SOAR

Superintendent J. A. Dailey of the Shale Hill Brick & Tile Co., Chillicothe, Mo., says the plant paid out $8,135.95 for freight for the month of May, which is ample proof of the large business being done. More than $2,000 of the freight bill represents increased tariffs on the coal used at the plant. Before the strike the coal came from nearby mines in Missouri, but the past few weeks the company was compelled to go to Illinois fields for its supply, with much longer haul and consequent increase in freight rates.

DENIES PAVING BRICK IS HIGHER IN KANSAS CITY

The charge that brick paving costs have been higher in Kansas City than in other cities in Kansas, recently brought by L. H. Chapman, water and light commissioner, was denied in a communication submitted to the city commissioners by Henry F. Schaible, street commissioner. Mr. Schaible says Chapman's information regarding prices paid for brick paving in other cities was erroneous, and he cites the cost of this material in Kansas City, Mo. as $3.84 a square yard on six-inch base and 24 per cent. test; in Salina, $3,23 a square yard and Wichita, $3.81 a square yard, both on five-inch base, as against $3.44 to $3.66 a square yard in Kansas City on six-inch base and 22 per cent. test. Mr. Schaible also calls attention to the fact that contractors in Kansas City must pay higher prices for labor, rock and sand than in the other cities he mentioned.

ROOFING TILE PLANT DOUBLES CAPACITY

The Henry R. Fell Co., East Carroll Street, Trenton, N. J., will build an addition to double the present capacity of the plant. This company manufacturers roofing tile. New mixing, pressing and other machinery will be installed.

TRENTON GETS NEW CLAY COMPANY

The Industrial Products Co., 482 Greenwood Avenue, Trenton, N. J., has filed certificate of incorporation for the purpose of manufacturing brick, tile and other construction materials, it is said. The authorized capitalization is $125,000. Frederick P. Rearwin, John P. Fenner and William F. Garton are named as incorporators.

STRIKING MEN GET WAGE INCREASE

Four hundred workers in the brick plants at Denning Point and Dutchess Junction, near Beacon, N. Y., who walked out on June 1, returned to work after being out a week, when their employers agreed to an increase of 25 cents per day. The men who load brick on barges will receive 25 cents more for every thousand brick loaded. No trouble was experienced during the strike.

The wage controversy having been settled at Haverstraw, practically all the yards have resumed operations and are working to capacity. There is a lack of skilled workers such as dumpers, sanders, molders and brick setters, which is hindering production in some cases.

FULLER BROS. ENTER WHOLESALE BUSINESS

Announcement has just been made public that Fuller Brothers & Co., New York City, have entered the wholesale building material field.

Founded 76 years ago, in 1846, by Dudley B. Fuller, as "Dudley B. Fuller, Iron and Steel Merchant," the business succeeded to his three sons, one of whom is still actively at the head of the company. The third generation is now represented in the business.

The Fuller institution has been prominently identified with the distribution of iron and steel, being representatives of many large iron and steel mills. The firm is one of the largest, if not the largest, distributers of wire and cut nails in this country. It was because of their tremendous nail business with not only the retail hardware trade but with the building material dealers all over the east, that they have been influenced to enter the wholesale field with a full line of masons' materials and building specialties.

MINERAL CITY GETS NEW COMPANY

The Hoover Clay Products Co. of Mineral City, Ohio, has been organized by Frank E. Baker, Lex Kintner, L. E. Giel, M. B. Pennell and Augustus W. Bell, according to a report.

NEW PLANT ADDED TO OHIO FAMILY

Incorporation of the Greenwich (Ohio) Clay Products Co., has been announced. This company has been organized with a capital of $25,000. As incorporators the following are mentioned: W. H. Noble, Charles McLaughlin, K. C. Jenney, C. A. Ingersol, F. H. Tenney.

MEDAL REOPENS PLANT LONG IDLE

In view of the increased demand for paving brick, it has been decided to reopen the plant of the Medal Paving Brick Co., at Carrollton, Ohio, which has been shut down for several years. The plant will be under the management of Howard Hawk, of Wooster, former superintendent of the plant. About 25 men will be employed at the start.

CALL SPECIAL MEETING OF TILE MEN

A special meeting of the Ohio Drain Tile Association was held at Lima, June 20, to discuss conditions in that industry.

The demand for drain tile, which was unusually strong in Ohio this spring, falls off by May 15, but this year it lasted six weeks longer than usual. Advancing prices on drain tile are expected as a result of the coal strike which affects the industry to a large extent.

FRANKLIN OPERATING BOTH PLANTS

The Franklin Brick & Tile Co. of Columbus is operating its two plants at Taylor Station, east of Columbus, with a full force of men. Sufficient coal to last from four to six weeks is on hand, and thus a considerable production is assured until the fuel situation becomes acute. At plant No. 2 a mat surface face brick is being made, while building tile and drain tile are being produced at plant No. 1. Labor troubles at these plants have all been adjusted.

COAL SHORTAGE CLOSES OHIO PLANTS

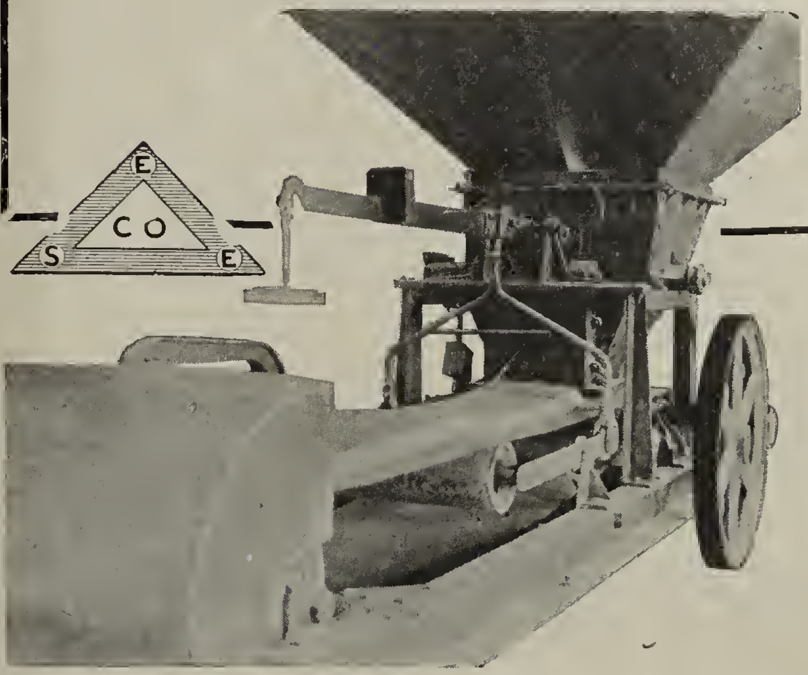
A larger part of the clay products plants in Ohio, which have been operated by union workers, are closed down be-

SUCCESSFUL

Where the demand is heaviest, where quality has first consideration, where conditions are adverse, where economy must be rigidly enforced, where speed is necessary—that is where the POIDOMETER is most successful.

Let our engineers tell you what the Poidometer will do for you.

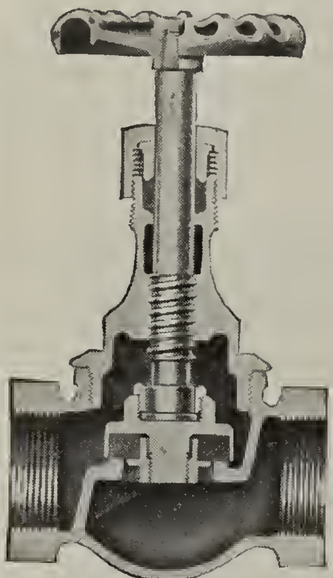
SCHAFFER ENGINEERING and EQUIPMENT COMPANY
2828 Smallman Street Pittsburgh, Pa.



How a Michigan plant hauls heavy tile pipe

One Clark Tructractor with a chain of trailers does the work of 9 wheel-barrow men at this plant.

CLARK TRUCTRACTOR CO.
1124 Days Ave. Buchanan, Mich.



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TO MAKE SURE OF PERFECT VALVE PERFORMANCE—first, use genuine Jenkins Valves, and second, when you renew a disc, use a genuine Jenkins Disc.

At supply houses everywhere

Sectional view Fig. 106, Jenkins Standard Brass Globe Valve fitted with Jenkins Renewable Disc.

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Published every other Tuesday, it's the **newspaper** as well as the journal of the clay-products industry.

If you need help—have a machine for sale or are looking for a second-hand machine—a classified ad in "Brick and Clay Record" will bring results.

Eight cents per word for first insertion; six cents per word for each additional insertion.

BRICK AND CLAY RECORD

cause of the orders of the Ohio officials of the United Mine Workers that no coal is to be mined for any purpose. This rule was made about three weeks ago but has just become fully effective as some leeway was given to permit the burning of brick and other clay products already made up. The plants in the Shawnee and Straitsville section are all closed while many in Massillon, Canton and Uhrichsville are down.

PLEDGE TO OPERATE PLANTS OPEN SHOP

The appended open shop resolution was adopted by clay products manufacturers from all parts of the state of Ohio, representing 50 per cent. or more of the production of the state, at a meeting held at the hotel Deshler, Columbus, Ohio, Saturday, June 3, 1922.

"WHEREAS, We as employers of many Ohio citizens working in our plants and clay pits fully realize our responsibility to the country at large and to each severally the communities where our plants are located so that construction of much needed homes, public buildings and other projects can continue and

"WHEREAS, The financial responsibility of continuing to operate our plants and clay pits rests solely with us as individuals without assistance from outside sources and

"WHEREAS, We intend to maintain and operate our plants and clay pits without interference from outside scources and

"WHEREAS, We intend to continue to deal with our employes, as such, without discrimination, toward the end that the past peaceful conditions may continue and

"WHEREAS, We Ohio clay products manufacturers in meeting assembled deplore the strikes that have been caused in Ohio by paid agitators, be it therefore

"RESOLVED, That we pledge ourselves to continue to operate our properties as heretofore under open shop conditions and counsel with one another toward that end."

H. A. Jung, secretary commissioner of the National Clay Products Industries Association acted as secretary. The next meeting will be at Hotel Deshler, Columbus, on July 13.

INCREASING CAPACITY 40 PER CENT.

Tuscarawas County, Ohio, will have the distinction of having two of the largest clay plants in the world.

Uhrichsville, Ohio's largest clay plant, the Evans Pipe Co., is to be enlarged about 40 per cent., making it equal in size with the Royal plant of the Robinson Clay Products Co. at Midvale, one of the largest sewer pipe and tile works in the world.

To make room for the improvement of the Evans plant, where tile is also manufactured, 20,000 cubic feet of earth are being removed from the hillside by two steam shovels.

The addition will consist of ten 36 foot kilns and buildings that will provide 50,000 feet of additional floor space. In the addition will be installed a new press pipe turner with dies and machinery to make 33 and 36 inch pipe.

The present equipment of the plant is twenty 36 foot kilns and two presses in one building and one press and twelve 32 foot kilns in another. The larger of the two present structures is four stories high.

The Evans family is a pioneer in the clay industry in this vicinity, which holds monstrous clay deposits. The late Thomas J. Evans, Sr., founder of the firm, was one of the builders of the Uhrichsville sewer pipe plant in 1883, which was sold in 1900 to the American Sewer Pipe Co. Eugene Evans, son of the founder of the company, president and superintendent of the firm, said the plant is being enlarged to reduce the manufacturing cost. By enlarging the plant Evans says he hopes to make sewer pipe cheaper and to make it the year round steadily. The demand for sewer pipe is fair he said, but prices are lower than they have been for years.

PURCHASE PENNSYLVANIA BRICK PLANT

The Keystone Iron & Metal Co. has purchased the brick plant at Ralston, Pa., including 1,000,000 building brick and 250,000 fire brick on the premises.

INCREASES CAPITAL $200,000

The Speers Sand & Clay Works, Philadelphia, Pa., a Delaware corporation, has arranged for an increase in capital from $300,000 to $500,000, for proposed expansion.

PHILADELPHIA CONCERN DISSOLVED

The Philadelphia Clay Material Co., 4629 West Girard Street, Philadelphia, Pa., manufacturer of sewer pipe and other burned clay products, has filed notice of dissolution under state laws. The company was chartered in 1901.

ORDERS INSURE CAPACITY PRODUCTION

The Shale Brick Co., Royalton, near Middletown, Pa., is running under full capacity at its plant, and reports a large volume of incoming orders for distribution at Philadelphia and vicinity. Recent shipments have included allotments as high as 1,000,000 brick per week to handle the immediate call. Orders are now being booked, it is said, to insure maximum production thruout the season.

HAZLETON COMPANY RUSHES PRODUCTION

The Hazleton (Pa.) Brick Co. is developing maximum production at its local yard, and orders on hand are said to insure capacity operation on full time, with full working force, thruout the summer months. The company recently resumed work at its plant, following a curtailment. Incoming orders for current accounts cover not only neighboring distribution, but shipments to a number of eastern centers.

HOOD REPORTS BEING BUSY

B. Mifflin Hood Brick Co.'s Memphis, Tenn., office in the Madison Avenue Building reports numerous contracts on which the company is supplying the brick in and around Memphis. At its plants in Tennessee, Alabama and Georgia operations are very active both in brick and tile manufactures this summer.

ORGANIZE BRICK COMPANY FOR $10,000

The Model Brick Co., of Houston, Texas, has been incorporated by Ritz Aebi, W. J. Carter and J. F. Meyer, according to a report. The company is capitalized at $10,000.

TO INCREASE CAPACITY 20,000

The Marshall (Tex.) Brick Co., is arranging for immediate enlargements in its plants to increase the output from about 70,000 to 90,000 dry pressed brick per day. New machinery will be installed.

FORM HOUSTON CLAY PRODUCTS CO.

The Houston (Tex.) Clay Products Co. has been organized with a capital stock of $10,000, according to a report. Brick, tile and other clay products will be manufactured. W. M. Merritt, C. L. Hunter and George Kruger filed application for a charter.

RESUMES WORK

The Drury Brick & Tile Co. at Essex Junction, Vt., has resumed operations at its plant after a shut down of several months.

VIRGINIA TO HAVE $200,000 COMPANY

The Salem (Va.) Brick Co. has been incorporated for $200,000 maximum, a report states. H. R. Garden, presi-

HENDRICK SCREENS
FOR ALL PURPOSES

ELEVATOR BUCKETS
CONVEYOR TROUGH and FLIGHTS
STACKS, TANKS,
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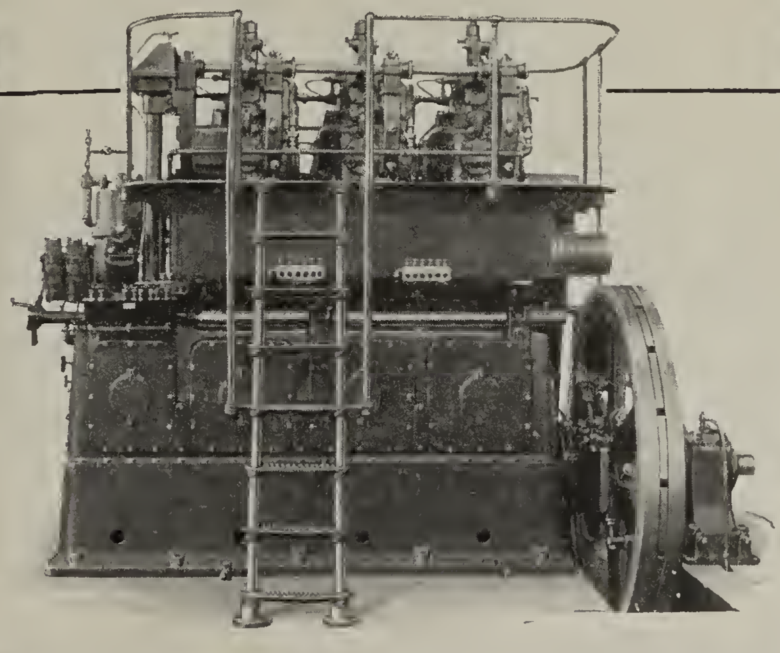
FOR CLAY PLANTS

Economical Power—Efficient Operation—Convenient—Conservative—Complete—Easy to care for—Always ready and reliable.

This engine operates on cheap fuel oil. Fuel storage space decreased. A small amount of fuel makes a big amount of power.

Send for new catalog, either vertical or horizontal types furnished.

THE HADFIELD-PENFIELD STEEL COMPANY
Bucyrus Ohio
Formerly the American Clay Machy. Co.



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THE Caldwell line is complete. Bearings — heavy, properly designed, and well finished. Pulleys of ample weight and accurately turned. The entire line has achieved outstanding recognition under hard service. Let us figure on your requirements.

H. W. CALDWELL & SON CO. LINK-BELT COMPANY, OWNER

Dallas, Texas, 709 Main St.— Chicago, 17th St. and Western Ave.— New York, Woolworth Bldg.

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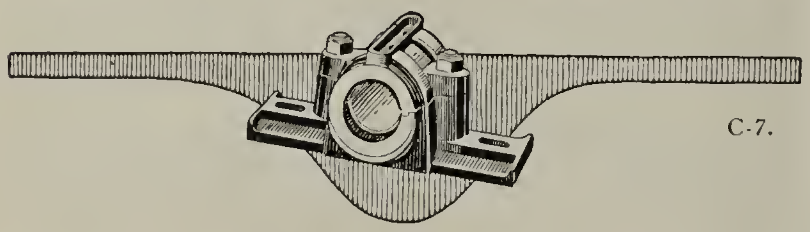

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Increase the value of your product by improving the color with

LAVINO

BRAZILIAN MANGANESE

"Best for Face Brick"

Economical
Adaptable to any Clay
Intense Staining Powers
Various Effects Obtainable
Uniform Analytically and Physically

Liberal samples and full information gladly furnished upon request.

E. J. LAVINO and COMPANY

Bullitt Building Philadelphia, Pa.

Grinding Plant: Plymouth Meeting, Pa.

dent, G. E. Pierpont, secretary, and G. T. Garden, all of Salem, are the incorporators.

INCORPORATE WAYNE BRICK CO.

The Wayne (Va.) Brick Co., has been organized with a capital of $50,000, to operate a local brick and tile plant, it is said. The company is headed by L. F. Adkins, W. F. Toney and C. D. Martin, all of Wayne.

BRICK SHORTAGE OBTAINS IN RICHMOND

The brick shortage which has been apparent in many sections of the country has also been noticeably felt in Richmond, Va., where contractors and builders have been unable to secure enough material to finish their projects. Brick plants in the vicinity have been working overtime to supply the demand, and brick is being brought in from as far away as North Carolina. A shortage of lumber has also held up several jobs. J. G. Earnest, secretary of the Richmond Builders' Exchange, said that the shortage was only temporary, and that the opening of the Southside brick plant, undergoing repairs and alterations at the time, would aid considerably with its output of 180,000 brick a day.

REOPEN HIDDEN PLANT

The Hidden brick plant near Vancouver, Wash., has been reopened with 15 to 20 men, for an indefinite run. Orders are on hand for a million and a half of brick, with prospects of more coming in. Besides local orders, they have a considerable order from Portland, Ore.

OLD INDUSTRY REVIVED

The Standard Clay Co.'s plant at Vader, Wash., was destroyed by fire several years ago. The property has recently been sold to eastern capitalists, and construction of a larger plant than the one destroyed will be immediately forwarded, it is said. The new company has been incorporated as the Vader Tile Co. Mr. Spear of Spokane is president. The new plant will employ from 80 to 100 men.

MAY BUILD PLANT IN WASHINGTON

The Denny-Renton company has had a crew of men at work several weeks at Sumas, Wash., opening up clay mines in a new location, the idea being to determine the extent of the clay deposit and the quality of the clay over the entire field of their holdings in that region. Several carloads of the clay are being shipped to the company's plant for testing and should the clay in these mines prove as good quality of clay as the older mines have already shown, steps will most probably be taken to construct a plant to manufacture brick and refractories.

TO REBUILD TUNNEL KILN DRYER

The Globe Brick Co., Kennilworth, W. Va., is considering plans for the rebuilding of its tunnel kiln drying department, destroyed by fire May 11, with loss approximating $10,000.

ORGANIZE WEST VIRGINA PLANT

Muddlety Valley Clay Products Co. has been incorporated at Hookersville, W. Va., with a capital of $10,000, a report states. The following are mentioned as incorporators: Kyle B. McCue, Porter Herold, David H. Fletcher, Persinger, W. Va.; A. N. Breckinridge, Summersville, W. Va.; Dyer Herold and R. E. Duffy, Hookersville.

STARTS BUILDING FIRST KILN

The Whitby (Ont.) Brick & Tile Co. has begun the installation of improvements and additions. According to

William Barrier, superintendent, the company has begun the erection of its first permanent kiln and dryer tunnels. A good shale deposit has just recently been located and will be worked. The company had heretofore only a top clay to work with.

TORONTO EXPERIENCES BRICK SHORTAGE

F. B. McFarren of the Interprovincial Brick Co. Ltd., Toronto, is endeavoring to satisfy the demand for face brick. There has been such a demand for residential work that there has been a marked shortage, especially in common brick, for the past two months. Brick is such a bulky material and so expensive to handle and store that from an economic view it is not possible to successfully operate a plant which is big enough to cope with an abnormal demand and at the same time pay its way during seasons or perhaps years when the demand is not brisk.

* * *

THE BUILDING SITUATION

(*Continued from page* 992)

records in the history of the city. During the month of May, 1,119 building permits were issued, representing work to a valuation of $2,224,000, as compared with 781 permits in the same month of last year, aggregating $1,466,000, indicated investment.

New Jersey Maintains Activity

Cities in northern New Jersey are responding energetically to the building movement, and the high construction totals reached in May are being duplicated in June operations. The first two weeks of June show about $1,200,000 in valuation of plans filed at the building bureau at Newark, with about 60 per cent. of this amount for housing construction and residential work.

Brick producers in the Hackensack district are developing maximum outputs in response to the demand for material, and all available men in this section, skilled or otherwise, find ready employment at the yards. Current demand is taking practically all current production.

Progress at Philadelphia

All indications point to the month of June as a record-breaker in construction operations at Philadelphia. The first two weeks show a total in excess of the entire month of June of a year ago, and building permits have been issued in this time for more than 500 dwellings, representing an investment of close to $3,000,000. Fire restrictions make brick the popular material for this class of work, and local plants are extremely busy. To give further impetus to the situation, local architects and engineers report a large volume of work on the boards, and for which figures will be asked within the next 60 days.

Baltimore Strikes High Pace

Each week in construction circles at Baltimore is bringing evidence of heavier operations as the season advances. With May rounding out an aggregate of over $3,000,000, the month of June shows a decided trend towards higher figures, with industrial work becoming a more pronounced factor in the situation. During the past fortnight plans have been filed for a number of factories, and plans now under way for similar structures insure a continuance in this line for the months to come.

Money Easier at Cleveland

Loosening of funds by savings and loan interests in Cleveland and vicinity has boosted the building business in Northern Ohio. Latest reports emanating from the

You Can Get a Good Refractory by Buying

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FIRE CLAYS

Anness Fire Clays have several advantages which make them especially successful. They are infusible, having an exceedingly high melting point. They resist all mechanical corrosion, and will withstand sudden changes without cracking.

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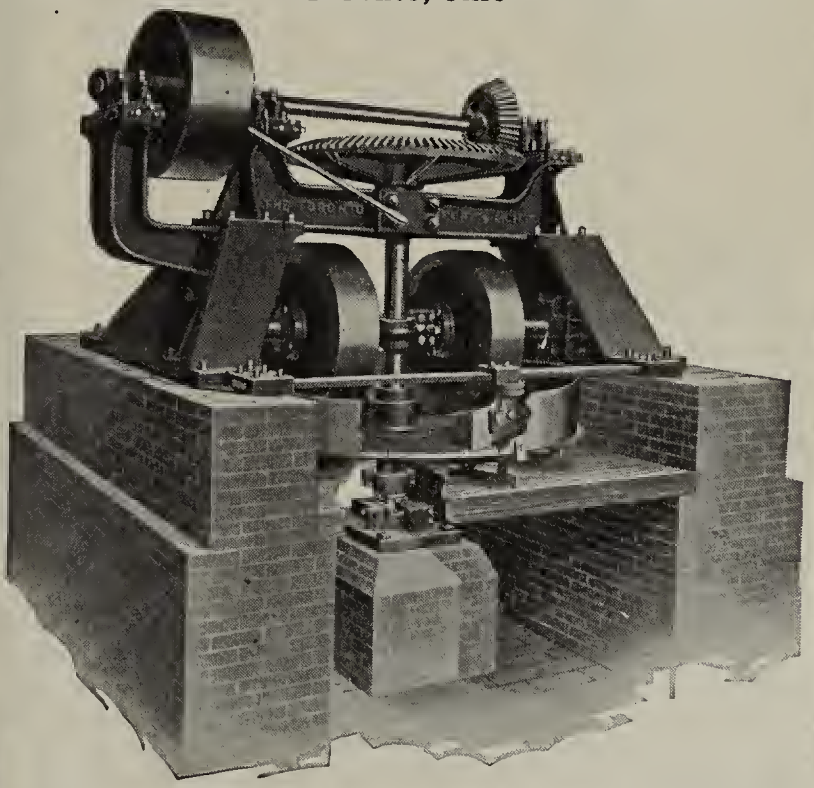
Woodbridge, New Jersey

A BETTER PAN

The scientific construction and rugged design of the Standard Type "B" Dry Pan makes it a better pan for the progressive clay plant operator.
You should investigate this pan before purchasing. It will not obligate you to get full information. *Write today.*

The Toronto Foundry & Machine Company
Toronto, Ohio



10 ft. Standard or Type "B" Dry Pan

"MINSTER" Industrial Locomotives

Assure the maximum of Service with a minimum cost per upkeep.

2 to 8 Ton Capacities.

Write for Catalogue

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510-516 Ohio St. Minster, Ohio
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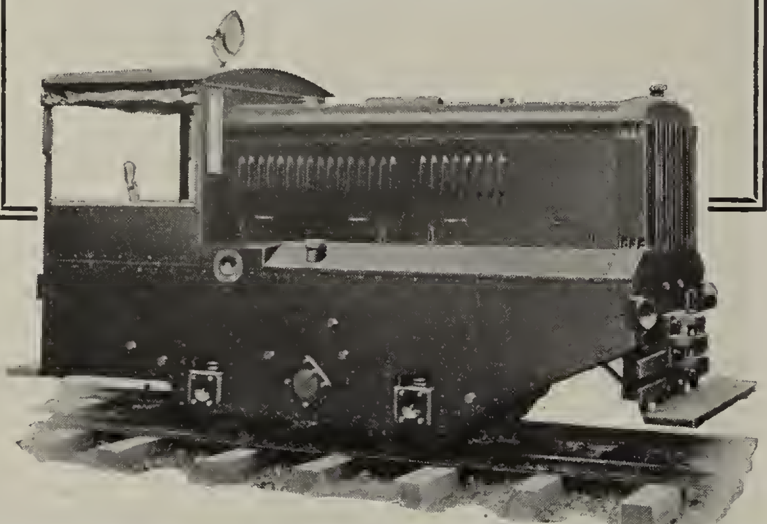


Tough Jobs

The tougher the job, the more practical Des Moines Mittens and Hand Pads are. They afford your men absolute hand protection, and thus speed up efficiency.

Ask for a dozen pairs on trial today, Mr. Dealer. It will not obligate you.

Des Moines Glove & Mfg. Company
508 Fourth St.
Des Moines, Ia

office of L. E. Weitz, president, the Cuyahoga County Building & Loan League, indicate that more than $12,000,000 now is available for housing construction. Approximately $300,000 more brick apartments, and more than $500,000 brick dwellings have been provided for in 1922 over 1921. On the other hand, frame dwelling construction has dropped off about 20 per cent. in value, increasing slightly in the number of projects.

Neither tile, brick nor other building materials, with a few exceptions in the aggregates, have advanced in the last fortnight in the Cleveland district, but indications are that this may follow at an early date, since manufacturers find difficulty in keeping up with the demand.

Prospects for higher material prices, and the fact that labor is getting even above the scale in wages here, is not deterring the individual builder from going ahead, apparently, and in fact the usual influence of a rising market stirring active buying seems more evident right now in the building industry than in any other line.

Chicago Costs Down 30 Per Cent.

One of the most representative architects in Chicago, a man who lets a very large amount of work under many varying conditions, reports that the general average of building costs in that city is some 30 per cent. below the peak prices. This reduction from the peak prices has been maintained in spite of the almost unprecedented activity, with its consequent great demand on labor. More than 13,000 building trades employes have now been placed at work by the Chicago Citizens' Committee to enforce the Landis Award. In some instances labor is being paid more than the scale because of the shortage of men. The scale for bricklayers is $1.10, but contractors' payrolls show $1.35 and $1.40 as being no rarity.

Reports from the building commissioner's office indicate the month of June thus far has kept up the pace set by the previous month. There seems to be no noticeable abating in construction work, and in all probability June will reach a new high record.

St. Louis Follows General Activity

Building permits for other than frame construction issued by the St. Louis building office for the week ending June 10 numbered 145 with an estimated value of $614,890, the second largest week of the year. The week is remarkable as not one structure reached $100,000. Industrial construction loomed larger than in preceding weeks, many commercial and manufacturing plants getting under way.

Machinery and Equipment

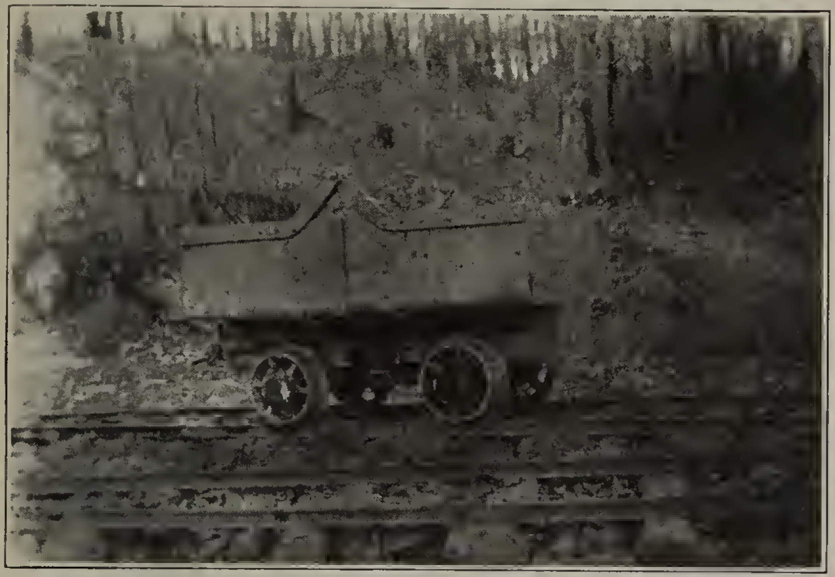
Devices and Methods, New and Old
Concerning Which Information of Interest
to the Clay Manufacturer is Published

WESTON LOW DUMP CARS

Among the many different types of dump cars in use on clay plants, the Weston Low Dump Car stands somewhat apart because of the unusual feature of dumping. When discharging its load this car literally breaks in the middle and dumps thru the track. The two sections of the car tilt to an angle of 45 degrees and more making the handling of wet clay comparatively easy

The Weston car is only about one-half as high as the ordinary side-dumping cars and its manufacturers claim this feature reduces the shoveling labor considerably, and increases the speed of loading. There is no time lost in dumping as it is never necessary to send a man down the track to empty the car. The hoist man controls the car and it dumps the clay automatically.

The car is built of heavy metal and it is claimed for them that they will meet the practical demands of the clay plant.



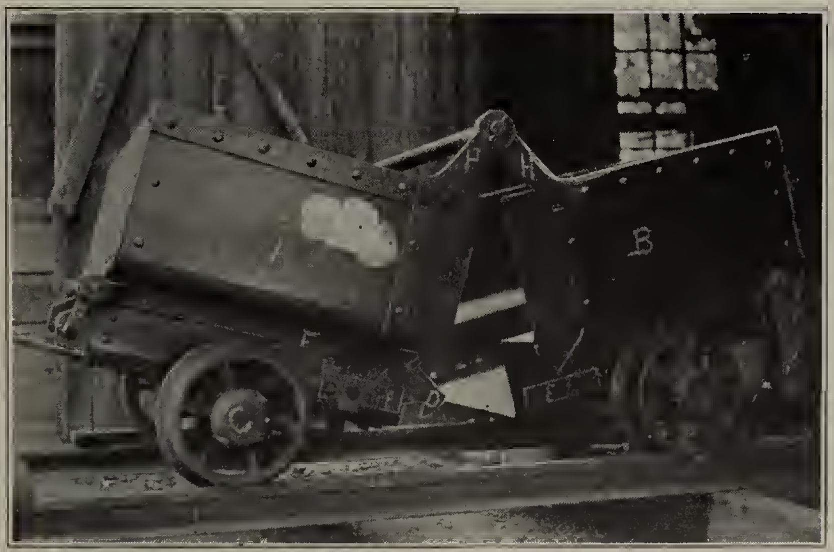
The Western Low Dump Car as it Looks When Closed.

The experience of many users is that these cars minimize the possibility of breakdown and interruptions.

The following letter was recently received from the Plymouth Clay Products Co., of Ft. Dodge, Iowa, commenting on their Weston installations:

"We have six Weston Dump Cars which we have been using in clay pits for a number of years and have found them very satisfactory for this work. Our principal reason for liking them is that they carry quite a large load—about two tons—and they are easy on the track when dumped. An ordinary coal car dumped on a tipple is hard on any trestle or track that might be hitched to it. This car can be dumped on a straight track delivery over the pit or railroad car, whichever is being used.

"We feel that the claims which Mr. Weston has made for his car are just claims and well worthy of consideration. For some purposes the car would not be practical, but it was made principally for handling clay and is well adapted to that purpose.



The Car Breaks in the Middle and Dumps at an Angle Greater Than 45 Degrees.

"You will note the car when dumped stands at a sharp angle and for that reason makes it easier to get moist clay out of the car. Another reason is that when the car breaks, it comes down with considerable force, striking the track, which helps to clean the car of any wet clay."

Look who uses 'em to
Improve Quality
and
Lower Costs

Kalo Brick and Tile Co.
Fort Dodge, Iowa

Pennsylvania Clay
Pittsburgh, Pa.

Iowa Pipe & Tile Co.
Des Moines, Iowa

W. S. Dickey
Kansas City, Mo.

Los Angeles B & T Co.
Los Angeles, Cal.

Blackmer & Post Pipe
St. Louis, Mo.

Ask any one of them what results they get.

The Brown Instrument Co.
4503 Wayne Avenue
PHILADELPHIA, PA.

Brown Pyrometers
Most used in the world

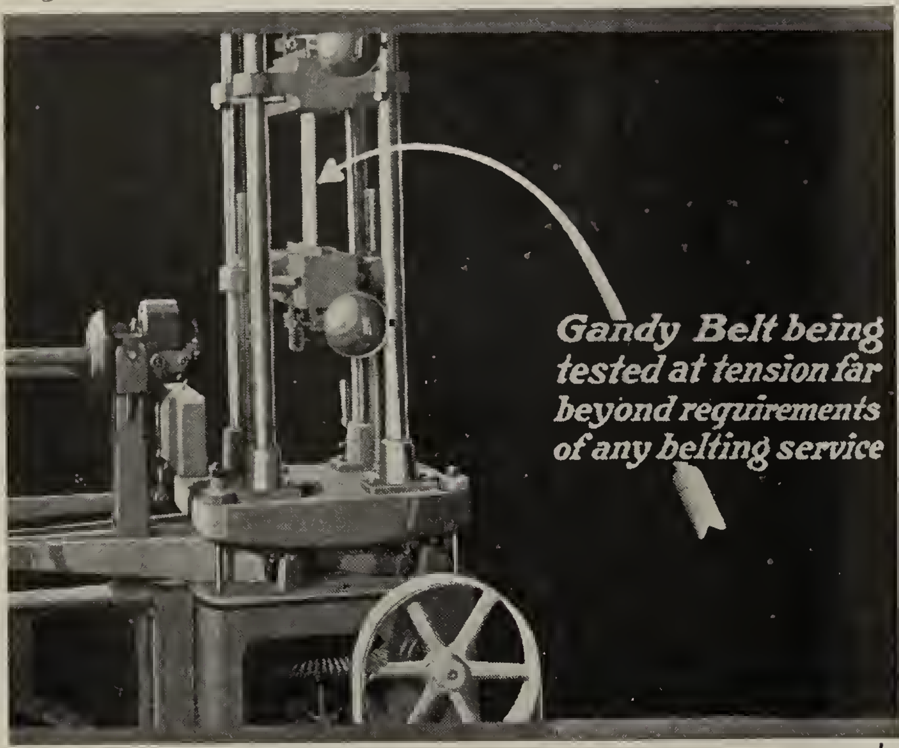
30 to 50 Tons Every Hour!

The Sunbury Automatic Car Unloader will unload your coal at the rate of 30 to 50 tons per hour, and will reduce your labor to one man.

Can you afford to be without this machine?

Ask for more detailed information TODAY!

The Sunbury Manufacturing Co.
Sunbury, Ohio


Gandy Belt being tested at tension far beyond requirements of any belting service

Rugged Strength in Every Foot of Gandy Belt

GANDY belting can withstand a tremendous strain. Its tensile strength is far greater than is ever required in even the most severe industrial installations.

Gandy standards of materials and workmanship are responsible for this unusual Gandy strength. In every step of the manufacture, character and trustworthy quality are built into Gandy belting. Gandy is the original stitched cotton duck belt—world's standard since 1880.

In the brick and clay industries it has long been recognized as the best for driving, for conveying, for elevating. In all classes of service, in all kinds of operating conditions, indoors and outdoors, in rain, sun and snow; Gandy belt holds up, giving the maximum satisfaction through day-in and day-out driving and lasting for years after an ordinary belt would have been discarded.

See that the next belt you buy is a Gandy. Then you are sure of greatest belting value. Look for the green edge, the Gandy name and the Gandy trade mark.

THE GANDY BELTING CO.

MAIN OFFICE AND FACTORY
732 W. PRATT ST. - BALTIMORE, MD.
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STITCHED COTTON DUCK
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Details Concerning New Models, Changes in Personnel, News Matters, etc., That Our Advertisers Believe Will Interest Our Readers.

A NEW ¾-YARD UNIVERSAL SHOVEL

The Bucyrus Company, of South Milwaukee, Wis., has just announced a new 20-ton, ¾-yard revolving shovel, to be known as the 20-B. This shovel replaces the 14-B revolving shovel so long and favorably known.

From boom point to ash pan, this shovel is a distinctly new design. For four months this machine has been under test and on actual construction jobs, and is now being offered as the most up-to-date machine of this class on the market today.

In general the design follows along the lines of the Bucyrus 30-B universal shovel, its bigger 1-yard brother. It is a "Universal" machine, being adaptable to dragline, high lift, sewer, clam shell, crane and other combinations.

No effort has been spared to design every detail of this machine, so as to make it easier to operate and more convenient to maintain than previous steam shovels of this size. This new machine contains a large number of new and exclusive features not found on other ¾-yard shovels.

These features include a two-part instead of a three-part hoist. This arrangement is the only practicable way whereby the dragline excavator can be made as good a dragline as the shovel is a shovel. Furthermore, wear on rope is reduced, a shorter rope is required, and faster digging speed is made possible without sacrifice of power.

This shovel also has the outside type of dipper sticks and box girder type of boom, similar to the 30-B. This has been proved, through many years of experience on the big 8 yard stripping shovels, to be the strongest possible construction for withstanding successfully the twisting and wrenching strains which are so severe in shovel work.

Improved Three Level Control

This shovel is extremely easy to operate. It is equipped with an improved and simplified three-lever control. One lever controls the independent operation of the throttle and the ram. This is a distinct improvement over other types. Furthermore, a release throttle is provided whereby the dipper may be lowered without the need of applying the brake.

The shovel is equipped with two speeds. A change from one to the other may be made with one lever, similar to an automobile gear shift. Propelling may be accomplished without the need of closing a gate valve to the hoisting engines.

The boiler has a larger heating surface and grate area than that on other ¾ yard shovels and is further equipped with a patented scale chamber. The house back of the boiler is of steel, which lessens the possibility of fire.

Increased Accessibility

Accessibility and simplicity of upkeep is prominent in the design throughout. One instance, thereof is the ability of lifting out the vertical propelling shaft from the top instead of extracting it from the bottom, and another, the fact that the swing rollers are arranged so that they may be removed without the necessity of jacking up the frame.

Another point of superiority is the manner of centering the revolving frame on the base. This is accomplished by the revolving frame casting and the base center casting fitting into each other in such a manner that they take all the side thrusts. This relieves the vertical propelling shaft, which is depended upon ordinarily, to center the machine of all strains.

Improved Caterpillars

The shovel is interchangeable from caterpillars to trucks or traction wheels. The caterpillars are a distinct improvement over any other type. Their points of superiority are so many that it is possible to enumerate but a few of them herein.

In the first place it contains less than half as many individual parts as the next simplest type built. This greater simplicity is obtained by superior design throughout.

As for tractive power, this shovel has easily climbed out of a muddy pit on a 20 per cent. grade of slippery clay.

The caterpillars do not extend at either end beyond the distance occupied by the traction wheels. This is of great importance in digging in small basements.

IMPROVED TYPE OF STEER

The shovel is equipped with the ideal type of steer, adopted after years of careful study and experimentation.

For operation in the pit, where a pit man is always available, a simple and effective hand steer is provided. The clutches are on the outside, where they are accessible and high out of danger of getting clogged with mud. There are no links and rods to get out of order.

For moving from job to job a patented power steering wheel is provided. This is an absolutely unique and exclusive feature of the 20-B. This device consists of a rubber-tired wheel which is easily and quickly attached to the front of the dipper. Steering is accomplished merely by pointing the boom in the direction of travel. The caterpillars track after this wheel. This device eliminates the delay incident to stopping on the road to throw in and out clutches. The machine travels steadily and straight; it will not zig zag down the road. With this wheel it is possible to travel four blocks while shovels with other types of power steer are traveling two or three.

Other important features include the improved A-frame, new dipper design, double-hinged latch lever, stack lowering device, etc.

The 20-B is a superior dragline excavator. The arrangement of the machinery makes possible a straight lead for the drag rope. The fair lead affords a vertical as well as a horizontal lead to the rope, it reduces friction and rope wear to a minimum. The standard equipment is a ¾ yard bucket and a 35 foot boom.

The 20-B may be supplied with various lengths of booms and handles, to adapt it to high lifts for deep basement excavation and other work of this character.

New ¾ Yard Bucyrus Shovel.

The 20-B is extremely useful for work also as a crane or clamshell machine.

Another unique feature of this machine is the use of electric steel in the small castings, making possible the most economic distribution of material. In strength and power this machine follows along with the same sterling qualities that for so many years have made the Bucyrus famous.

* * *

ARE YOU CUTTING YOUR ELECTRIC POWER COSTS?

Electric power is no less important in the manufacture of clay products than the material itself. Yet it has not, until recent years, been given the proper cost consideration. The number of motors in use has, within the last seven years, increased from 343,000 to 766,000 in industrial plants alone.

It has been common practice to consider an electric motor, that failed to give service, as being "worn out." If it seemed to have served a reasonable length of time the first thought was to replace it with a new motor.

The more recent necessity of cutting power costs has revealed some interesting facts to electrical engineers. Motor houses that specialize on rebuilt motors have found an ever-increasing demand for motor reconstruction. Out of over 1,200,000 electric motors now in use in the United States, it has been estimated that over 400,000 have been completely rebuilt. Comparative tests made in industrial plants show that a properly

"HURRICANE" DRYERS

Drying Electrical Insulators

THIS TUNNEL DRYER was the means by which one large plant, manufacturing high tension electric insulators, cut more than a week from their manufacturing schedule. It now takes but 48 hours to completely and uniformly dry this ware. It previously required from ten days to two weeks.

Shrinkage checks are practically nil, as the drying conditions are always under automatic control. Breakage due to handling is eliminated since the ware is not touched from the time it leaves the green finisher until after it has been dried, and ready to be dipped. The insulators are handled on rubber wheeled trucks, being progressed through the dryer by an automatic pushing apparatus, at regulated speed. Even the heaviest pieces are turned out in excellent shape.

It gives complete satisfaction to know that you have dependable equipment that consistently turns out your ware in fine condition, precisely on schedule. Have You?

You can rely on "Hurricane" Dryers. Let us describe to you the possibilities of these machines at your plant.

Send for complete details, NOW.

The Philadelphia Drying Machinery Co.
3351 Stokley St., Philadelphia, Pa.

reconstructed motor gives service equivalent to a new motor of the same type and capacity. This is due to the fact that all wearing parts are replaceable and when replaced make it virtually a new motor. The cost of reconstruction is low enough to permit a very substantial saving in this important phase of clay products manufacture—the power cost.

The Fuerst Friedman Co., 1259 West Third Street, Cleveland, Ohio, make a specialty of rebuilt motors.

⁂

The Davenport Locomotive Works, builders of all types of locomotives, and located at Davenport, Iowa, have an attractive four page folder telling some of the characteristic features of these locomotives. An interesting illustration of a locomotive, with boiler removed, shows their method of driving without bevel gears.

A copy of this leaflet or other more detailed information will be sent on request, and the Davenport Company call attention to the fact that: "Parties asking for catalogs will not be unduly annoyed."

⁂

HAVE YOU SEEN OUR ANNOUNCEMENT IN THE CLAY PRODUCTS CYCLOPEDIA?

The Stevenson Company, Wellsville, Ohio, are following a plan which will insure their Cyclopedia advertising receiving the maximum attention. New York Belting & Packing Company, New York City, are also working along the same plan, which consists in incorporating in their regular Brick and Clay Record advertising, the page numbers of their Cyclopedia advertising, inasmuch as this latter is designed to give more detailed information.

⁂

The Thew Automatic Shovel Company, Lorain, Ohio, have Bulletin 112 ready for distribution. It describes their type 00 steam shovel.

⁂

MAGNESITE PRODUCTION IN 1921

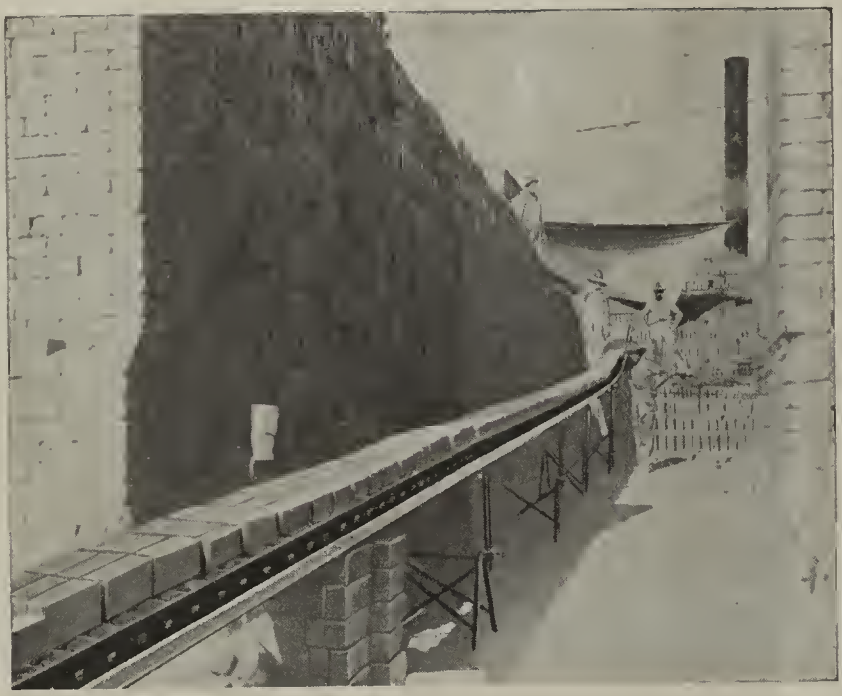
Reports received by the United States Geological Survey, Department of the Interior, from producers of magnesite show that the quantity of crude magnesite sold or treated during the calendar year 1921 was 47,904 short tons, valued at the mines at $510,177. This quantity was less than half that for the year 1920, and smaller than that for any year since 1916. California was the only producing state, and nearly all the product was calcined for use as plastic material. The output of domestic magnesite for use in refractory products was very small.

In contrast to the large decrease in domestic production there was an increase in imports, which consisted chiefly of crude magnesite. The apparent consumption of magnesite in the United States in 1921 was equivalent to about 113,500 short tons of crude magnesite, 58 per cent. of which was imported. This consumption is the lowest recorded for many years, probably largely because of conditions in the metallurgic industries, which consume, in the form of refractory material, most of the magnesite used.

⁂

HOW ENGLAND REDUCES BUILDING COSTS

A writer in the London Daily Herald gives credit to the National Building Guild for the reduced cost of building in England compared with 18 months ago. The guild first exposed the large profits formerly made by private contractors, and this led to a decline in prices of building materials. Contractors who in September, 1920, made bids of 1,000 pounds per house to the Manchester City Council are now offering to build the same dwelling for from 400 to 500 pounds cheaper. At that time the guild bid 756 pounds, 10 shillings, and after a block of eight houses had been built in Manchester it was found the actual cost was a little over 731 pounds. The guild made no profit on these house The guild estimates at present are from 180 to 323 pounds cheaper than the 1920 figures. The exchange valu of an English pound sterling, which is composed of 20 shillings, is about $4.50.



The Brickmaker's Friend

It would be a difficult matter to find a more fitting name to apply to Standard Ball-bearing Roller Brick Conveyors.

These sectional, untiring, ever ready conveyors have been tried and never found wanting in times of need.

Unlike the usual portable power driven mechanical contrivances, they never endeavor to shirk a day's or even a portion of a day's work by pleading, "out of order."

Operated by a perpetual power, GRAVITY, the sensitive ball-bearing rollers respond instantly and freely to the pressure of the load, and riding friction free, brick and all clay products are transported from car to pile or vice versa.

Our representative in your territory will gladly call and show you how effectively a few sections of these time- and labor-saving conveyors will operate in your yard.

Write Today

STANDARD
CONVEYOR COMPANY
NORTH ST. PAUL, MINN.

New York
227 Fulton St.
Milwaukee
601 Security Bldg.

Chicago
549 W. Washington St.
Cleveland, O.
1108 Hippodrome Bldg.

Representatives in all principal cities

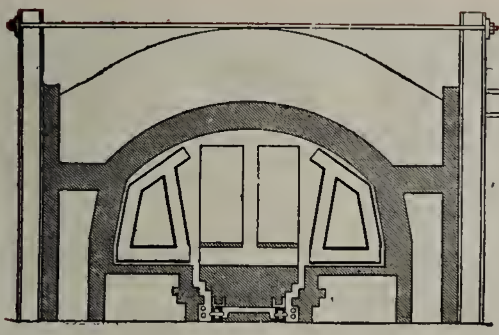
Leading Clay Journal of the World

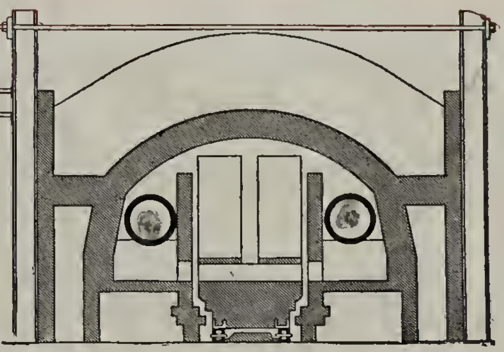
BRICK and CLAY RECORD

UNIVERSITY OF ILLINOIS LIBRARY
JUN

Vol. 60, No. 13 Chicago June 27, 1922

Published Every Other Tuesday at 407 S. Dearborn Street, Chicago. Subscription Price $3.00 per year. Entered as Second Class Matter January 2, 1911, at the Post Office at Chicago, Ill., under the Act of March 3, 1879.





THE KILN OF SURE CONTROL

AMERICAN
◆ DRESSLER ◆
TUNNEL KILN

How Dressler Kilns Made Good

In three of our first installations for coarse clay products, an average of 85 tons of ware per day was burned.

This amount could easily have been increased 15%, had original specifications of clay, coal, and drying been adhered to.

Our kilns will produce for you today and are producing for others on the basis of 100 tons daily.

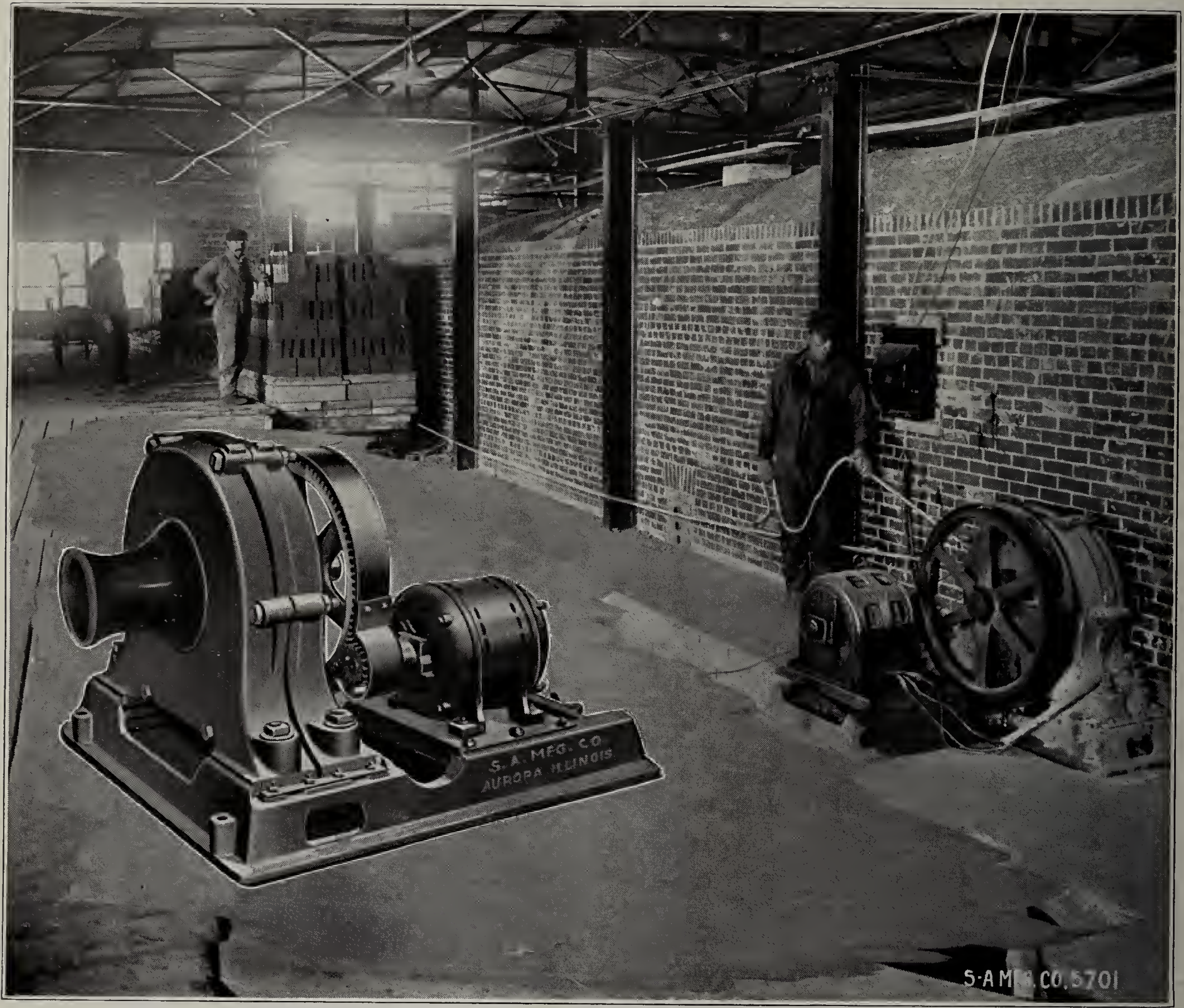
Write and ask about our 40 successful installations.

American Dressler Tunnel Kilns
INCORPORATED
1740 East 12th Street Cleveland, Ohio

New Stucco Lath Made of Burned Clay.

Best Practices in Use of Explosives.

Clay Men Warn Against Price Raising



POWER PULLERS

New Adaptation—

S-A Safety Car Pullers are installed where a machine for moving empty or loaded cars on a switch siding is required. In all parts of the country these machines are being successfully operated and proving to be **real time and labor savers.** The most recent adaptation of this machine is the application to the needs of the brick plant.

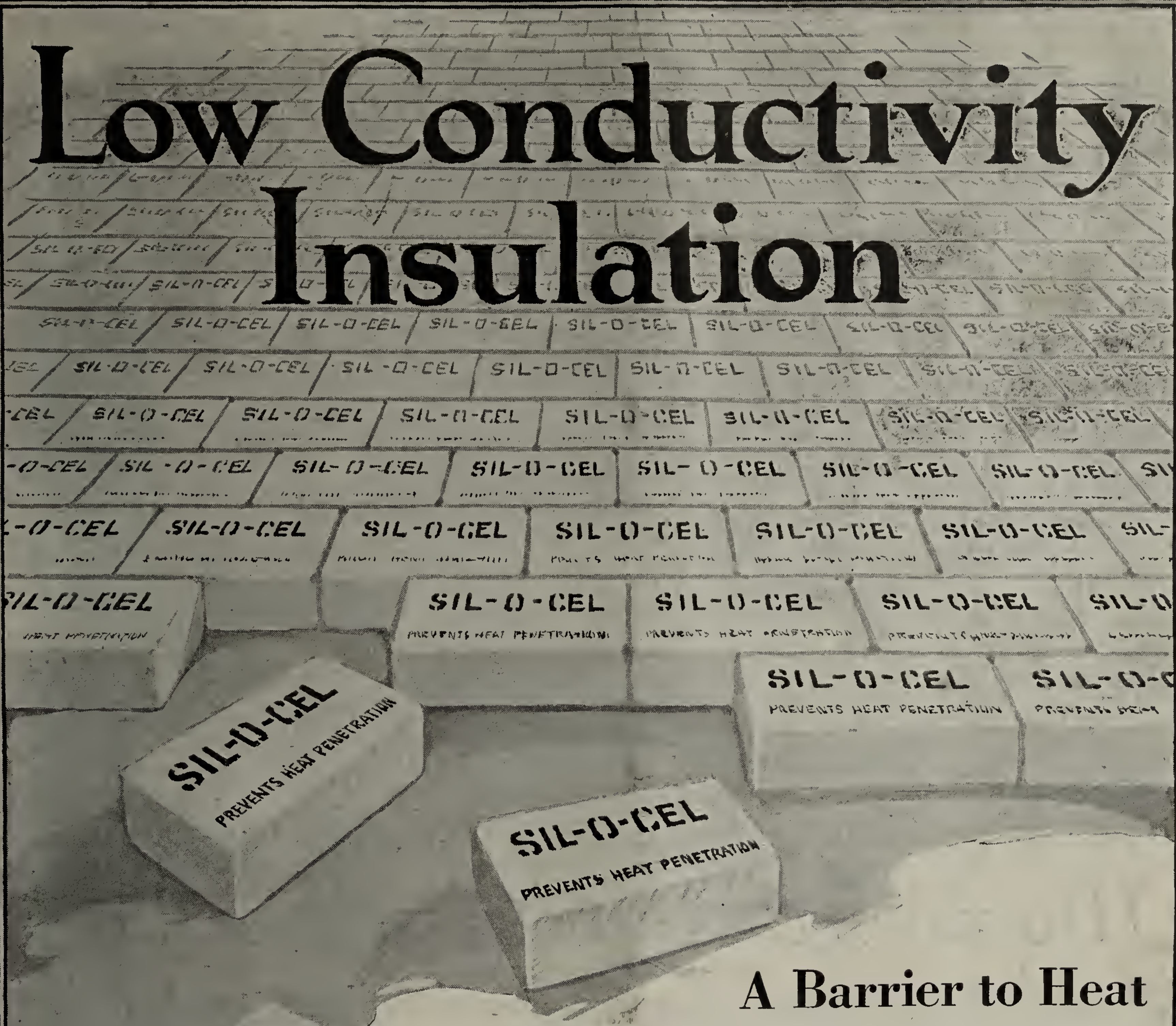
For pulling loaded cars on kiln tracks this machine is meeting widespread approval. Brick manufacturers are enthusiastic concerning this labor saving method of moving kiln cars loaded with brick.

S-A Safety Car Pullers are built in different styles.

Have an S-A Engineer give you more information concerning the savings which can be made with one of these power pullers.

STEPHENS-ADAMSON MFG. CO., AURORA, ILLINOIS

Low Conductivity Insulation



A Barrier to Heat

—that is an exact description of Sil-O-Cel Insulation.

Penetrating refractory lining and uninsulated walls, heat generated at a combined expense of fuel, labor, storage and handling, passes into the air and is wasted. And the higher the internal temperature, the greater the loss.

Sil-O-Cel Insulation forms a barrier to heat penetration and holds radiation losses to the lowest possible minimum. It retards heat flow at temperatures which no other insulation can withstand and has proved in many diversified industries, *an investment, not an expense.*

For every insulating requirement there is a form of Sil-O-Cel which can be installed without change in design to effect immediate and continuous savings. An engineer will gladly tell you in dollars and cents just what Sil-O-Cel will save on your equipment.

Write nearest office for Bulletin B-5A giving complete data, or mail the coupon.

CELITE PRODUCTS COMPANY

NEW YORK-11 BROADWAY CHICAGO-MONADNOCK BLDG. SAN FRANCISCO-MONADNOCK BLDG.
BOSTON-79 MILK STREET BUFFALO-MUTUAL LIFE BLDG. CINCINNATI-UNION CENTRAL BLDG.
CLEVELAND-BULKLEY BLDG. DENVER-SYMES BLDG. DETROIT-BOOK BLDG. LOS ANGELES-VAN NUYS BLDG.
NEW ORLEANS-WHITNEY CENTRAL BANK BLDG. PHILADELPHIA-BULLETIN BLDG.
ST. LOUIS-RAILWAY EXCHANGE BLDG.

Celite Products Company,

Gentlemen:

Send Bulletin B-5A and explain in detail the advantages of SIL-O-CEL Insulation, how it saves fuel, increases capacity and maintains even temperatures. I am particularly interested in the insulation of____________________________

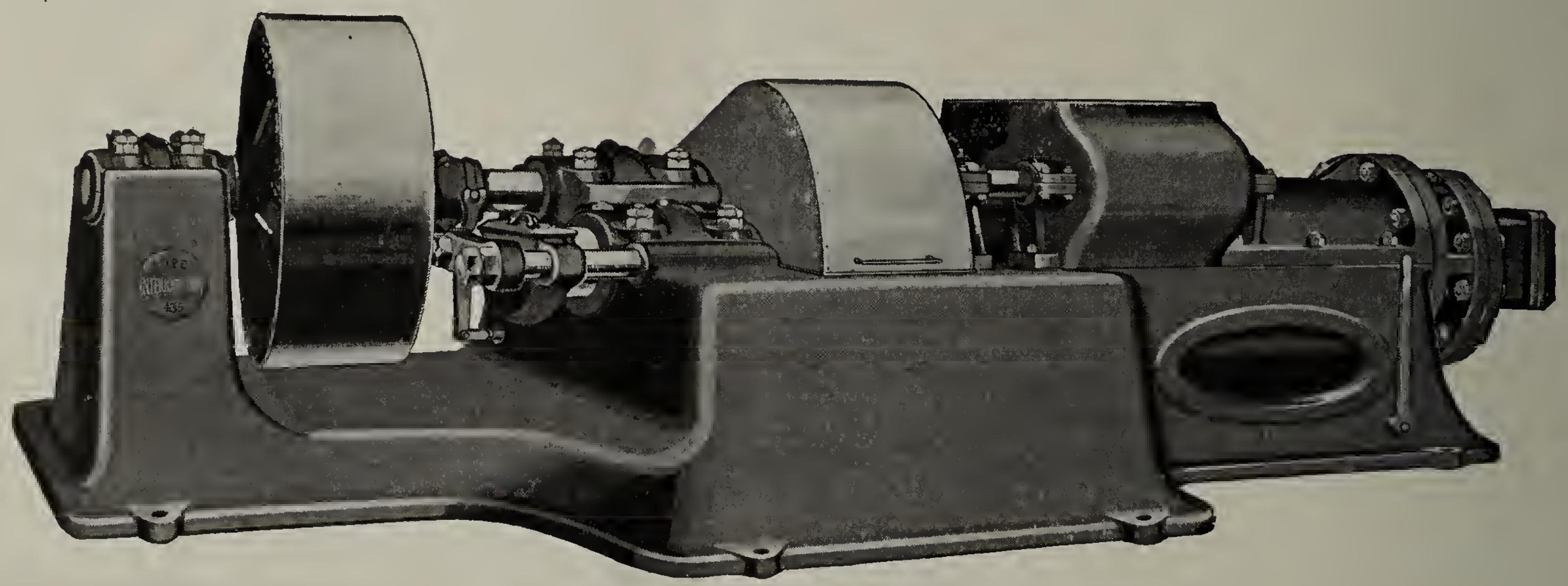
Name type of equipment

Name____________________________
Firm Name____________________________
Address____________________________

425 - 435 - 445

AUGER MACHINES

PATENTED



Booth Brick and Lumber Co.

New Toronto, Ontario
CANADA

*has just installed a
435 Auger Machine
for hollow tile.*

Ask for Bulletin 30

International Clay Machinery Co.

DAYTON, OHIO, U. S. A.

Pittsburgh, Pa. New York Toronto, Ont., Canada

"Proctor" DRYERS

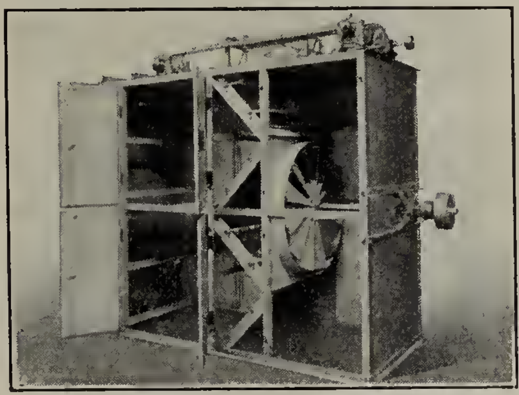
FOR ALL CLAY PRODUCTS

Automatic Conditioning Machine for Insulators in Moulds

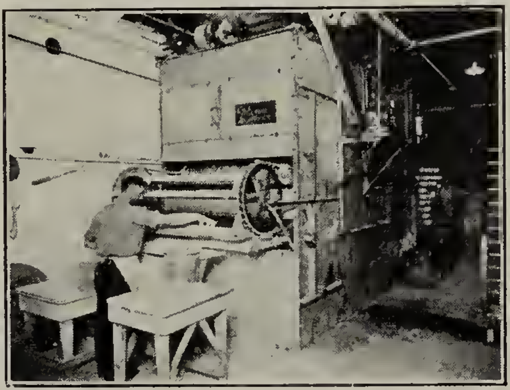
Tunnel-Truck Humidity Dryer for Electrical Porcelain, Chemical Stoneware, Tile, etc.

Automatic Conveyor Dryer for Pressed Porcelain, Spark Plugs etc.

Automatic Stove Room for General Ware

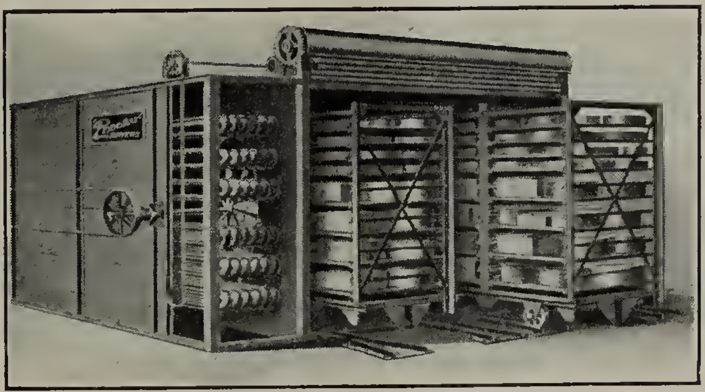


Rack Dryer for Sanitary Ware

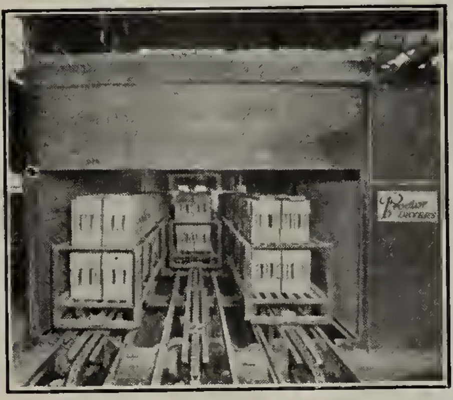


Automatic Mangle for Dipped Ware

Automatic Conveyor Dryer for Saggers



Truck Dryer for Saggers



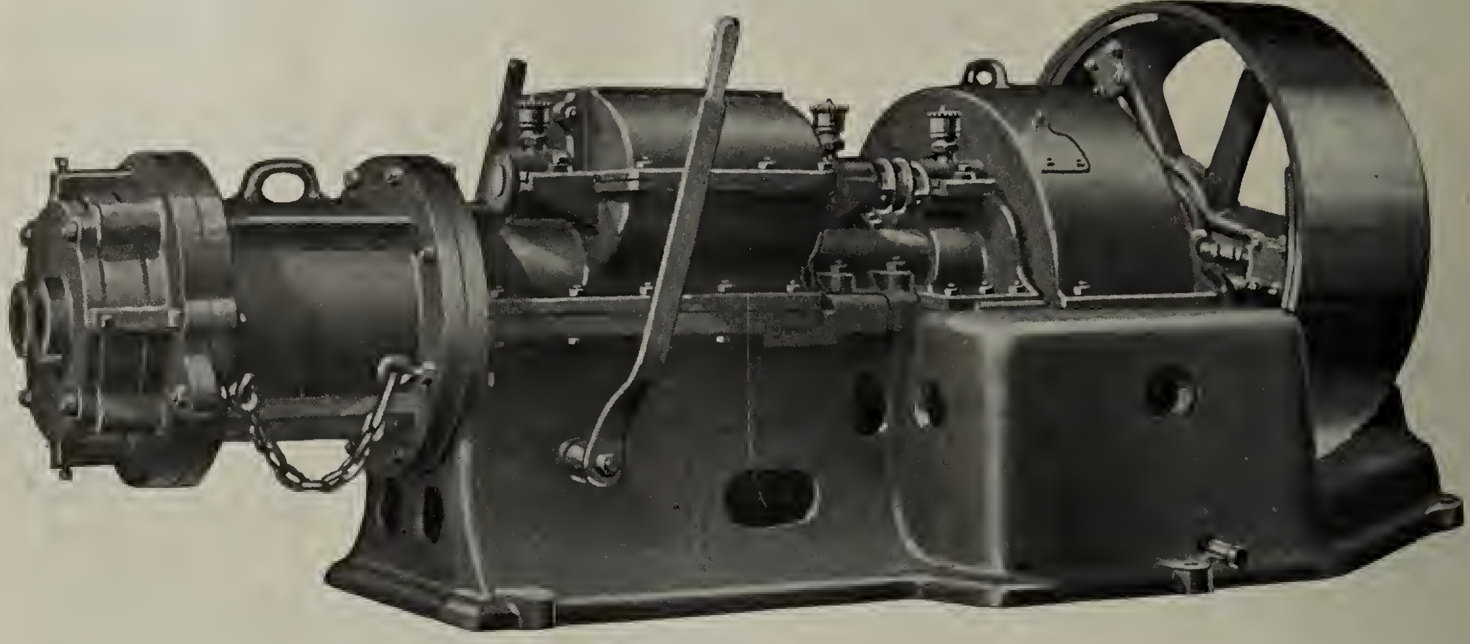
Tunnel-Car Dryer for Brick and Heavy Clay Products

Installations of "Proctor" Dryers command attention to their perfect quality drying of any Clay Product—and their wonderful savings against the time and cost of drying by any other method.

Let us acquaint you with the "Proctor" Dryers for your product, guaranteed as to capacity and results.

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA

No. 21 AUGER MACHINE



BONNOT MACHINERY

MEANS

ECONOMY FOR YOU

Reduction of inventory, and low operating costs are the goals of all manufacturers during the present re-adjustment period.

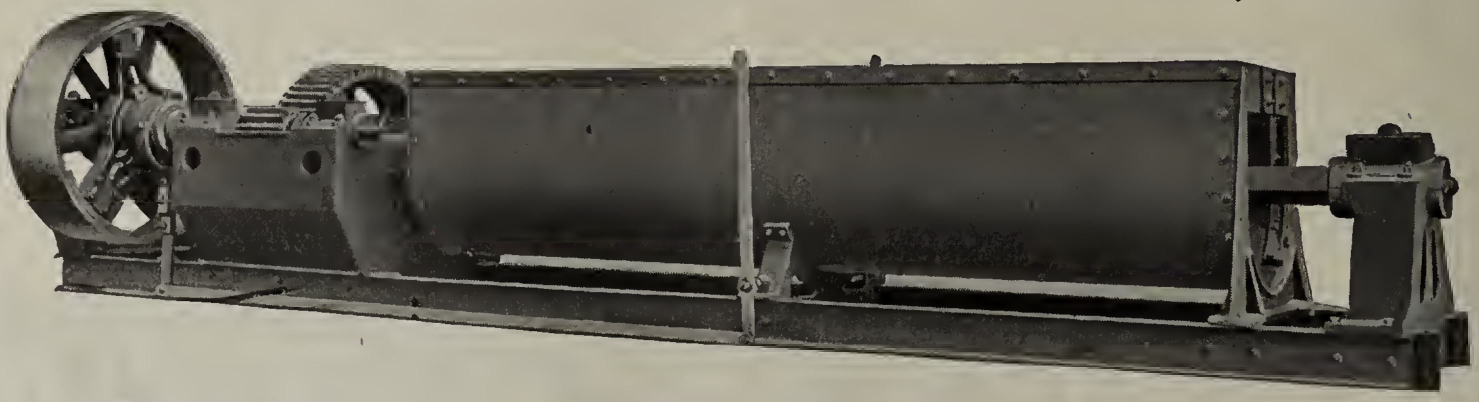
A BONNOT "Standardized" plant will mean a minimum number of repair parts in stock—and a similar minimum of use for them.

Dollar for dollar you get the most value for your money when you buy BONNOT equipment. Service is built into every part and no essential feature is overlooked.

For the manufacturer who wants the best—because it is the most profitable investment—we offer a complete line of clay working machinery.

Write for a catalogue

THE BONNOT COMPANY, CANTON, OHIO



STYLE "E" PUG MILL

Note pages 206 and 207 of the Clay Products Cyclopedia.

Starting with Bare Ground We can furnish a COMPLETE Modern Brickmaking Plant

Supplies and Machinery Headquarters to the Brick Industry is more than a name with us. The above plant was designed, erected, the materials and machinery furnished and installed, by our Brick Machinery Department.

We can duplicate the job for anyone considering an additional plant.

And we can help make your present plant more efficient and complete. Go over your equipment and check it carefully. Make a list of your needs and send that list to us—today.

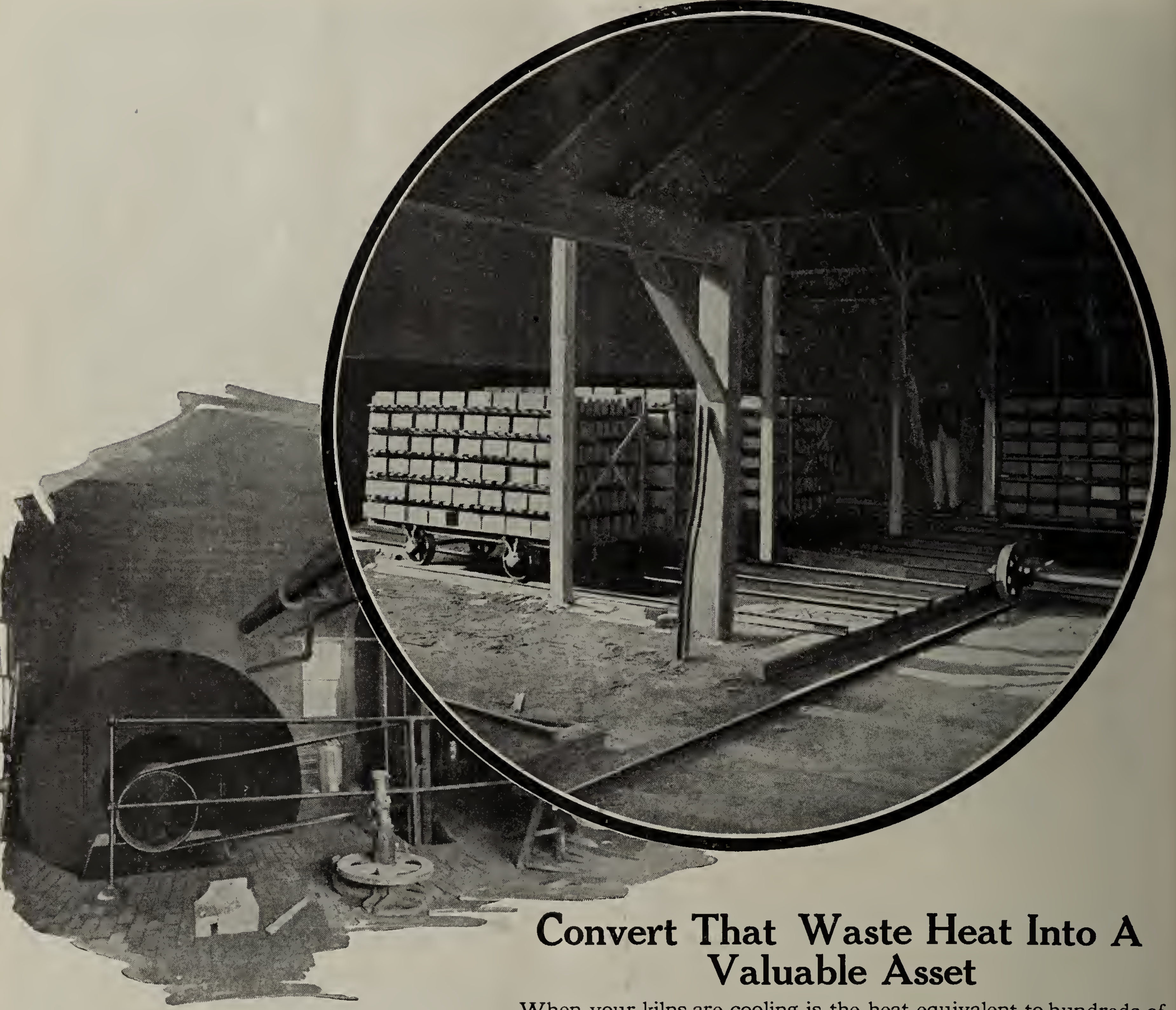
Lancaster Iron Works, Inc.

LANCASTER, PENNSYLVANIA, U. S. A.

Brick Machinery Department **James P. Martin, Manager**

Branch Factory, New London, Ohio

Specialists in completely equipping Building Brick and Fire Brick Plants for the manufacture of brick by the Soft Mud Process



"Sirocco" Waste Heat System is lowering production costs in the plant of the Claycraft Brick Company, Groveport, Ohio.

Convert That Waste Heat Into A Valuable Asset

When your kilns are cooling is the heat equivalent to hundreds of boiler horse-power wasted, or is it utilized to dry the green brick previous to burning?

With a "Sirocco" System in your plant you can convert this waste heat into a valuable asset and at the same time improve the quality of your product because:

The brick are bone dry when set.
The dry brick are stronger.
The brick do not kiln mark.
The brick are more evenly burned.
The brick are not discolored.
The water smoking period is shortened.

We will gladly refer you to brick plants in your locality where the "Sirocco" Waste Heat System has increased output, lowered operation costs and proved a profitable investment.

Have you received a copy of "The Brick Dryer?" It is well worth reading.

AMERICAN BLOWER COMPANY, DETROIT
BRANCH OFFICES IN ALL PRINCIPAL CITIES
CANADIAN SIROCCO COMPANY, LIMITED, WINDSOR, ONTARIO
(102)

"Sirocco" Products
TRADE MARK

BLOWERS · EXHAUSTERS · VENTILATING
FANS · AIR WASHERS · ENGINES

**FOR HEATING, VENTILATING, DRYING,
AIR CONDITIONING, MECHANICAL DRAFT**

BUCYRUS
20-B BULLSEYE

A NEW $^3/_4$-YARD SHOVEL

This is the machine you have been looking for. A Shovel built for the Shovelman. In designing this machine no detail has been too small to neglect which would make it easier to operate and more convenient for the operator.

Powerful, strong, fast, snappy, and yet light. Thoroughly tested by months of operation, under the severest of conditions, before being put on the market.

BUCYRUS

ESTABLISHED IN 1880

RAILROAD TYPE AND REVOLVING SHOVELS OF ALL SIZES-DRAGLINE EXCAVATORS-TRENCH EXCAVATORS-DIPPER, HYDRAULIC AND PLACER DREDGES, SPREADER PLOWS, WRECKING CRANES, ETC.

A SPECIAL PLANT DEVOTED EXCLUSIVELY TO SMALL REVOLVING SHOVELS

BUCYRUS COMPANY, SOUTH MILWAUKEE, WIS.

NEW YORK CHICAGO BIRMINGHAM SAN FRANCISCO PORTLAND DENVER

433

Clip this Coupon
and Mail to
Nearest
Office

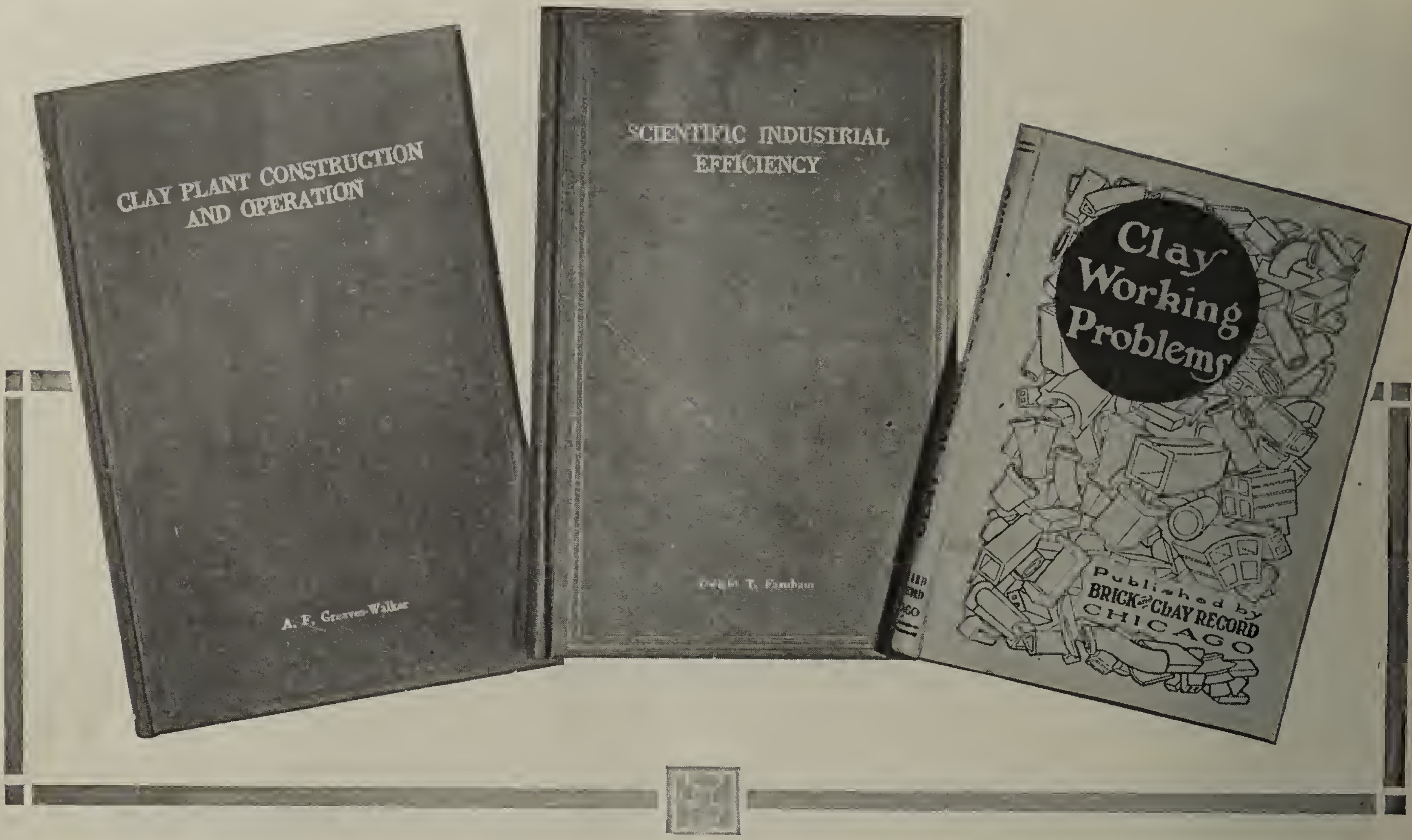
Date

BUCYRUS COMPANY:
Please mail me your Bulletin C-201, describing your 20-B UNIVERSAL SHOVEL.

Name

Address

B


CLAY PLANT CONSTRUCTION AND OPERATION
A. F. Greaves-Walker
SCIENTIFIC INDUSTRIAL EFFICIENCY
Dwight T. Farnham
Clay Working Problems
Published by BRICK & CLAY RECORD CHICAGO

Our Contribution to Your Library

Within the past half decade, *Brick and Clay Record* has added to the permanent collection of ceramic literature, not only in America, but also abroad, at least three noteworthy volumes in attractive cloth binding.

Most American clay products manufacturers are thoroly familiar with the situation as it concerned clayworking literature as early as five years ago. Many of the books in the average clay worker's library were of foreign production—books written by English, French and German ceramists covering clay plant practices in their respective countries—very good books in their time, but wholly inadequate for the American clayworker working under conditions vastly different from his European colleagues.

Seeing the need of ceramic literature with a distinctly American viewpoint, the editors of **Brick and Clay Record** set about to supply the need. What you see in the illustration above is the result of our labors.

"Clay Plant Construction and Operation," is our most recent production. It ought to have a place as a text book in every university or college that maintains a course in ceramic engineering. It is written by A. F. Greaves-Walker, a ceramic engineer with a wealth of practical experience in the business. The price of this handsomely bound volume is $4.00 postpaid.

"Scientific Industrial Efficiency," by Dwight T. Farnham, a prominent industrial engineer in the clay products manufacturing industry, has now been on the market for more than two years, enjoying a phenomenal sale, not only in the clayworking industry, but also among manufacturers in many other lines. This book is considered to be a standard reference work wherever scientific industrial efficiency is being considered. The price of this book is only $2.00 postpaid.

"Clayworking Problems" is to the clay plant as the veteran medical adviser is to the home. It is consulted in times of distress—when the plant or any part thereof is "sick." There is only a very limited quantity of this book left which means that if you have not secured your copy as yet you had better make no further delay. The price is only $1.50 postpaid.

These three valuable books are our contribution to your clayworking library. Are they there in your bookcase? If not, better order at once, the missing volumes. Send your check, money order, or draft to

BRICK & CLAY RECORD'S Book Department, 407 S. Dearborn St. Chicago, Ill.

Greater Range

"Low cost production starts at the pit. When you've licked your raw material problem, you're on the way to real profits," remarked one of the owners of this eastern brick plant.

"We think we have the answer," he says. "We are digging and loading all our clay with a Thew Type O electric. It's the cheapest and most efficient way we know and we've been in this game a good many years."

Whether you agree with him or not take a look at the photograph. You're bound to admit it looks like a good layout. See the teeth marks in that bank? Only a real shovel will put the dipper up through nineteen feet of stiff clay at one stroke, loading cars as fast as they can kick 'em in.

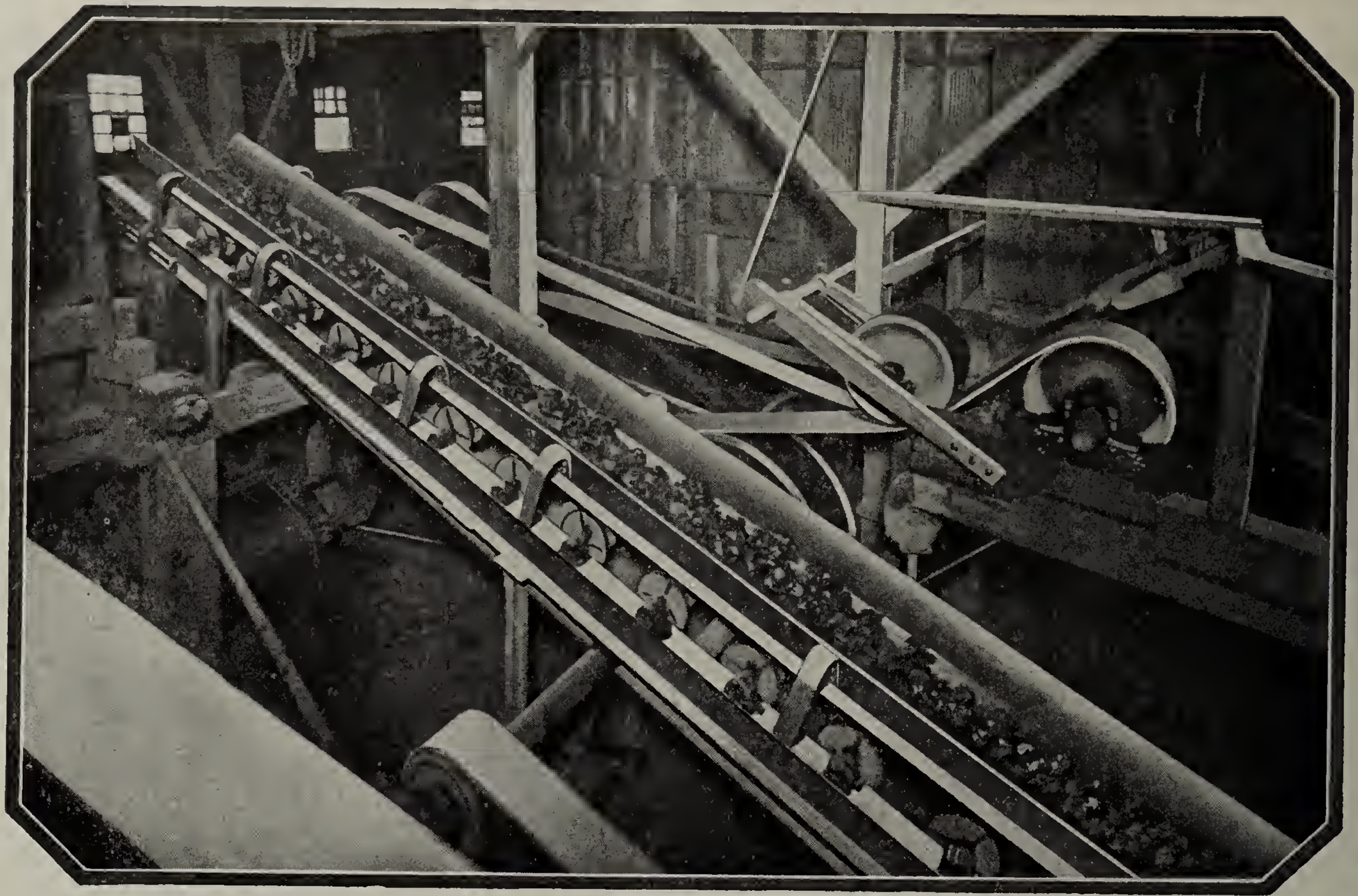
It's the 19′ 6″ standard boom that gives it the reach. It's the design and construction that give the needed ruggedness and power. And it is electric operation, properly adapted, which makes it economical.

Write for your copy of Bulletin 201-B and study the Type O electric in detail.

THE THEW SHOVEL COMPANY, LORAIN, O.

EXPORT DEPARTMENT
ALMACOA ALLIED MACHINERY COMPANY OF AMERICA ALMACOA

Thew
Power Shovels



Only a Good Belt Will Stand This—

Above is shown a 26-inch, 8-ply belt conveying mixed clay at the plant of Bach Brick Company, Chicago.

The abrasive effect of mixed clay, especially when carried up a steep incline, is killing on a conveyor belt. The tendency to bite into the rubber cover at the point of loading and when the clay "backslides" can only be overcome by proper compounding of the rubber. It must be made to suit the service, neither too hard nor too soft. And the cotton duck must be just right in weave and weight for a properly working belt.

Tell us what your conditions are and we will gladly prescribe a belt to exactly suit your requirements.

NEW YORK BELTING & PACKING CO.

Rubber Goods for the Clay Industry

New York	Boston	Chicago	Philadelphia
Pittsburgh	St. Louis	Salt Lake City	San Francisco

Indestructible Conveyor Belting

Further information can be obtained from our catalog on Page 234, CLAY PRODUCTS CYCLOPEDIA

Trade Names Now in Use
on Face Brick and Other Clay Products

The purpose of this directory is two-fold: it serves to prevent a manufacturer from adopting a trade-name that is already in use—and it also helps manufacturers who use it to establish priority of claim to a name.

ALLIANCE RUFFS—Alliance (O.) Brick Co.
ALUMINITE—The Lock Haven Fire Brick Company, Lock Haven, Pa.
ALUMINITE—The Stowe-Fuller Co., Cleveland, Ohio.
ANNESS HOLLOW TILE—Anness & Potter Fire Clay Co., Woodbridge, N. J.
ARKATEX—Southern Building Products Co., Little Rock, Ark.
ARMOR—Greenpoint Fire Brick Co., Brooklyn, N. Y.
ART-TEX—W. E. Loomis, Sherbrooke, P. Q.
ARTISTICO—Capital Clay Co., Des Moines, Ia.
ARTBRIQUE—Yingling-Martin Brick Co., Johnsonburg, Pa.
ATHENA—Hocking Valley Fire Clay Co., Nelsonville, Ohio.
BABYLONIAN—The Standard Brick Company, Crawfordsville, Ind.
BEAVERCLAY—Beaver Clay Mfg. Co., New Galilee, Pa.
BISHOP COLONIAL—Southern Brick and Tile Company, Louisville, Ky.
BRADFORD HOLLOW BUILDING TILE—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD REDS—Bradford Brick & Tile Co., Bradford, Pa.
BRADFORD RUFFS—Bradford Brick & Tile Co., Bradford, Pa.
BURLAP—Key-James Brick Co., P. O. Alton Park, Tenn.
BURMAH—Walkers Mills Stone and Brick Co., Pittsburgh, Pa.
CALEDONIAN—Fiske & Co., Inc., Boston and New York.
CHENILLE-TEX—Martinsville Brick Co., Martinsville, Ind.
CASTLE-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
CLAYTEX—Walton N. Cable, New York City.
CLOISTER—Western Brick Co., Danville, Ill.
COLONIAL—Capital Clay Co., Des Moines, Ia.
CONCO CLAY PRODUCTS—H. D. Conkey & Co., Mendota, Ill.
CORALTONE—Harris Brick Co., Zanesville, O.
CORALROSE—Harris Brick Co.. Zanesville. O.
COLUMBIA—Columbia Clay Co., Columbia, S. C.
CORDOVA (Roofing Tile)—Gladding, McBean & Co., San Francisco and Lincoln, Cal.
CORSWEVE—Thomas Moulding Brick Co., Chicago, Ill.
CROTON-REDS—New Castle Mining and Clay Products Co., New Castle, Pa.
CROWN—Green Fire Brick Co., A. P., Mexico, Mo.
DENISON—Mason City (Ia.) Brick & Tile Co.
DE LUXE—The Standard Brick Company, Crawfordsville, Ind.
DIAMOND—Missouri Fire Brick Co., St. Louis, Mo.
DORIC—Western Brick Co., Danville, Ill.
DUNBAR—United Refractories Co., Uniontown, Pa.
EGYPTIAN PAVING BLOCK—Murphysboro (Ill.) Paving Brick Co.
E. F. B. CO.—Elk Fire Brick Co., St. Marys, Pa.
ELKCO—Elk Fire Brick Co., St. Marys, Pa.
ELKCO SPECIAL—Elk Fire Brick Co., St. Marys, Pa.
ELK STEEL—Elk Fire Brick Co., St. Marys, Pa.
EMBOSTEX—Streator (Ill.) Brick Co.
EMPIRE—Green Fire Brick Co., A. P., Mexico, Mo.
EMPIRE—The Minor Fire Brick Company, Empire, Ohio.
EMPIRE—Western Brick Co., Danville, Ill.
EVERHARD ANTIQUE—Everhard Co., Massillon, O.
EVERHARD CORINTHIANS—Everhard Co., Massillon, Ohio.
EVERHARD DOUBLE-TEXTURE—Everhard Co., Massillon, O.
EVERHARD FERN-LEAF—Everhard Co., Massillon. Ohio.
EVERLASTING—Mason City (Ia.) Brick & Tile Co.
FALLSTON IRON SPOTS—Fallston Fire Clay Co., Pittsburgh, Pa.
FALLTEX—Fallston Fire Clay Co., Pittsburgh, Pa.
FISKLOCK—Fiske & Co., Inc., Boston and New York.
FRASERCLAY—Fraser Brick Co., Dallas, Texas.
F. R. C. CHROME—Federal Refractories Company, Alexandria, Pa.
F. R. C. MAGNESITE—Federal Refractories Company, Alexandria, Pa.
F. R. C. SILICA—Federal Refractories Company, Alexandria, Pa.
FROSTBURG RED COMMON BUILDERS—Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG ROUGH TEXTURE — Savage Mountain Fire Brick Co., Frostburg, Md.
FROSTBURG RED HOLLOW TILE—Savage Mountain Fire Brick Co., Frostburg, Md.
FUL-TONE—Fultonham-Texture Brick Co., East Fultonham, Ohio.
FULTONHAM-TEXTURE — Fultonham-Texture Brick Co.. East Fultonham. Ohio.
GLONINGER IRON SPOTS—Gloninger & Co., Pittsburgh, Pa.
GOTHIC—Western Brick Co., Danville, Ill.
GREENDALES—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RED RUGS—Hocking Valley Pro. Co., Columbus, O.
GREENDALE RUGS—Hocking Valley Pro. Co., Columbus, O.
GRID—Fiske & Co., Inc., Boston and New York.
HAWK-I-TEX—Capital Clay Co., Des Moines, Ia.
HAYES RUN—Hayes Run Fire Brick Co., Orviston, Pa.
HAYES RUN OIL—Hayes Run Fire Brick Co., Orviston, Pa.
HEATHER-TEX—New Castle Mining and Clay Products Co., New Castle, Pa.
HI-GRADE—Southwest Building Supply Co., Springfield, Mo.
HOCKING BLOCK—Hocking Valley Brick Co., Columbus, O.
HOLLAND SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
HOMESPUN—Thomas Moulding Brick Co., Chicago, Ill.
HY-TEX—Hydraulic-Press Brick Co., St. Louis, Mo.
INTERLOCKING TILE—Fraser Brick Co., Dallas, Texas.
IRONCLAY—Iron Clay Brick Co., Columbus, O.
IRONSTONE—Salt Lake Pressed Brick Co., Salt Lake City, Utah.
KELSO—Hayes Run Fire Brick Co., Orviston, Pa.
KEYSTONE—Elk Fire Brick Co., St. Marys, Pa.
LADLE—The Zoar Fire Clay Company, Zoar, Ohio.
LAKE SHORE MINGLED SHADES—The Burton-Townsend Co., Zanesville, Ohio.
LAKE SHORE BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
L. H. STEEL—The Lock Haven Fire Brick Company, Lock Haven, Pa.
LO-TEX BRICK—The Longmont (Colo.) Brick & Tile Co.
LO-TEX TILE—The Longmont (Colo.) Brick & Tile Co.
M. D. ELK—Elk Fire Brick Co., St. Marys, Pa.
MEDAL BLOCK—Medal Paving Brick Co., Cleveland, Ohio.
METALTEX—Columbia Clay Co., Columbia, S. C.
MEXICO, MO.—Green Fire Brick Co., A. P., Mexico, Mo.
MINOR—The Minor Fire Brick Company, Empire, Ohio.
MITCHELL EXTRA—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL SUPERIOR—Mitchell Clay Mfg. Co., St. Louis, Mo.
MITCHELL NO. 1—Mitchell Clay Mfg. Co., St. Louis, Mo.
MOBRIQUE—Harris Brick Co., Zanesville, O.
MONTEZUMA RED FACE—Montezuma (Ind.) Brick Works.
MOSAIC—Western Brick Co., Danville, Ill.
NATIONAL—The National Fire Brick Company, Strasburg, Ohio.
NO. 1—J. H. Gautier & Co., Jersey City, N. J.
NUVOGUE—Boone (Ia.) Brick, Tile & Pav. Co.
OIL—J. H. Gautier & Co., Jersey City, N. J.
OLD HOMESTEAD—Burton-Townsend Co., Zanesville, Ohio.
OLD ROSE COLONIAL—Montezuma (Ind.) Brick Works.
OLEAN BLOCK—Sterling Brick Co., Olean, N Y
ORVISTON—Hayes Run Fire Brick Co., Orviston, Pa.
OXFORD—Southern Brick and Tile Company, Louisville, Ky.
PASTELS—The Standard Brick Co., Crawfordsville, Indiana.
PENN.—The Lock Haven Fire Brick Company, Lock Haven, Pa.
PERSIAN SPLIT—Thomas Moulding Brick Co., Chicago, Ill.
POS-TEX—Poston Brick Co., Springfield, Ill
POTOMAC-SAVAGE—Savage Mountain Fire Brick Co., Frostburg, Md.
"POTTRY"—B. Mifflin Hood Brick Co., Atlanta, Ga.
PROMENADE—Yingling-Martin Brick Co., Johnsonburg, Pa.
RAINBOW — Burton Townsend Co., The. Zanesville, Ohio.
RED ROCK RUFFS—Auburn Shale Brick Co., Auburn, Pa.
ROTEX—Elk Fire Brick Co., St. Marys, Pa. Gettysburg, Pa.
ROYAL HA-SIERS—Decatur Brick Mfg. Co., Decatur, Ill.
RUBYTEX—Columbia Clay Co., Columbia, S. C.
RUFTEX—Thomas Moulding Brick Co., Chicago.
RUG—Hocking Valley Pro. Co., Columbus, O.
RUSTIQUE ORIENTAL—Martinsville (Ind.) Bk. Co.
ST. MARYS—Elk Fire Brick Co., St. Marys, Pa
SAVAGE MOUNTAIN—Savage Mountain Fire Brick Co., Frostburg, Md.
SHALE-TEX—Streator (Ill.) Brick Co.
SIL-O-CEL—Celite Products Co., Chicago, Ill.
S. M.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. A.—Savage Mountain Fire Brick Co., Frostburg, Md.
S. M. EXTRA—Savage Mountain Fire Brick Co., Frostburg, Md.
SPECIAL—Green Fire Brick Co., A. P., Mexico, Mo.
SPEEDWAY BLOCK—Alliance (O.) Clay Prod. Co.
STANDARD—Green Fire Brick Co., A. P., Mexico, Mo.
STANDARD—The National Fire Brick Company, Strasburg, Ohio.
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TAVERN BRICK—Metropolitan Pav. Brick Co., Canton, O.
TEXTUR—Thomas Moulding Brick Co., Chicago, Ill.
THERMO—The Crush Brick Co., Sulphur Springs, Texas.
TIFFANY—Thomas Moulding Brick Co., Chicago, Ill.
TORONTO—Toronto Fire Clay Co., Toronto, O.
TOWNSEND BLOCK—The Burton-Townsend Co., Zanesville, Ohio.
TURKESTAN—Beaver Clay Mfg. Co., New Galilee, Pa.
TURKO—Rochester (Pa.) Clay Products Co.
UNITED—United Refractories Co., Uniontown, Pa.
U. R. CO.—United Refractories Co., Uniontown. Pa.
U-TEX—Fultonham-Texture Brick Co., East Fultonham, Ohio.
VERTEX—Beaver Clay Mfg. Co., New Galilee, Pa.
VITRI-CRAFT—Schuylkill Valley Vitrified Products Co., Oaks, Montgomery Co., Pa
VOLCANIC—Beaver Clay Mfg. Co., New Galilee, Pa.
WATERPROOF—Gloninger & Co., Pittsburgh, Pa.
WIRE-CUT-LUG BRICK—Dunn Wire-Cut Lug Brick Co., Conneaut. Ohio.
YALE-TEX—Gloninger & Co., Pittsburgh, Pa.
ZOAR—The Zoar Fire Clay Company, Zoar. Ohio.

Brick and Clay Record Buyers' Directory of Manufacturers of Machinery, Equipment and Supplies

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Air Receivers.
Duff Patents Co., Inc.
Frost Manufacturing Co.

Air Cooling and Purifying

Ammeters
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Anti-Friction Metals.
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Apparatus
American Blower Co.

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American Blower Co.

Appraisals.
American Appraisal Co.

Automatic Stove Rooms.
Proctor & Schwartz.

Babbitt Metal.
Toronto Fdry. & Mach. Co.

Barium Carbonate.
Roessler Hasslacher Chem. Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

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Potts & Co., C. & G.
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Belting.
Gandy Belting Co.
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Main Belting Co.
New York Belting and Packing Co.
Wellington Machine Co.

Belting (Elevator).
New York Belting and Packing Co.

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Link-Belt Company.
Morse Chain Co.

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Goodyear Tire & Rubber Co.
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Stephens-Adamson Mfg. Co.
Wellington Machine Co.

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Bristol Company, The

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Belt Lacing.
Bristol Company, The

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American Blower Co.

Boilers.
(See Engines and Boilers.)
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Armstrong Cork & Insulation Co.
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Stephens-Adamson Mfg. Co.

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Mathews Gravity Carrier Co.
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Brick (Ornamental).
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Brick Machines.
(See "Dry Press," "Stiff-Mud" and "Soft-Mud."

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Bucyrus Company
Erie Steam Shovel Co.
Link-Belt Company
Marion Steam Shovel Co., The
Stephens-Adamson Mfg. Co.

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Hendrick Manufacturing Co.
Link-Belt Company.
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Wellington Machine Co.

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Stevenson Co.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.

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Celite Products Co.

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Morse Chain Co.
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Wellington Machine Co.

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Morse Chain Co.

Chains, Silent (Rocker Joint)
Morse Chain Co.

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Stevenson Co.
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Schofield-Burkett Cons. Co.

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Hendrick Manufacturing Co.
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Bonnot Co.
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Coal Schutes.
Galion Iron Works.

Coal Unloaders.
Galion Iron Works.

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(Also see Elevators and Conveyors.)
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Link-Belt Company
Louisville Machine Mfg. Co.
Stephens-Adamson Mfg. Co.

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Wellington Machine Co.

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Bucyrus Company.
Erie Steam Shovel Co.
Link-Belt Company.

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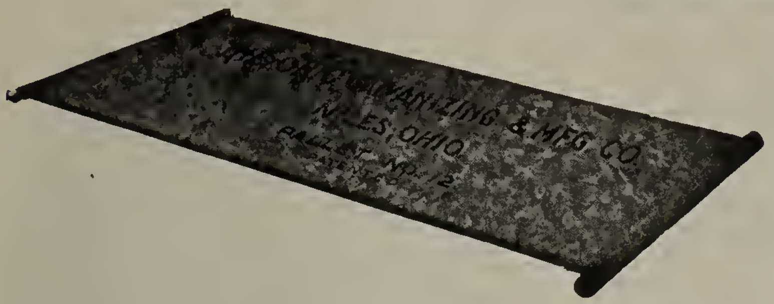

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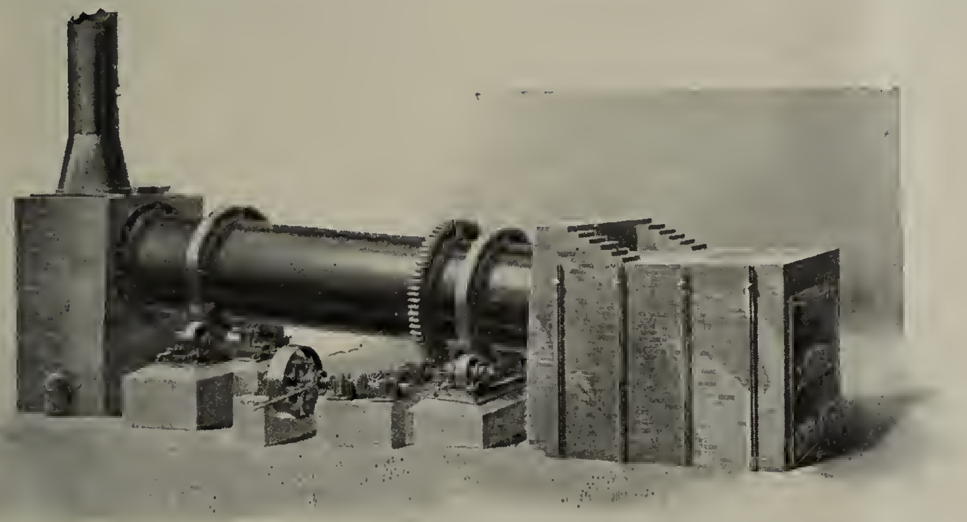

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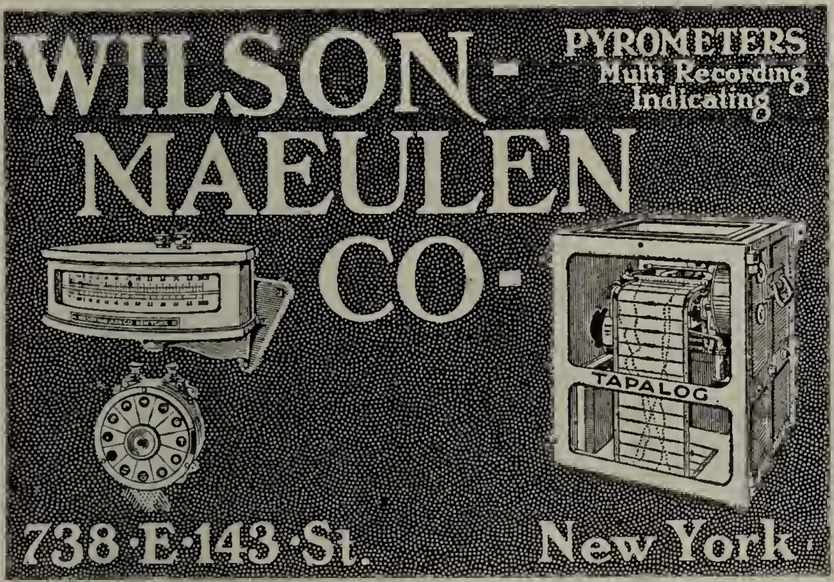

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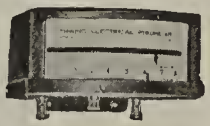

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Wellington Machine Co.

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Stevenson Co.
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Wellington Machine Co.

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Brown Instrument Co.

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Waller Crow.

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Crossley Machine Co.
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Frost Manufacturing Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers Equipment Co.
Robinson, Frank H.
Wellington Machine Co.

Engines (Oil)

Hadfield-Penfield Steel Co.
Wellington Machine Co.

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Ball Engine Co.
Bay City Dredge Works.
Bucyrus Company.
Erie Steam Shovel Co.
Link-Belt Company
Schofield-Burkett Cons. Co.
Thew Shovel Co.

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Bay City Dredge Works.
Buckeye Traction Ditcher Co.
Bucyrus Company.
Erie Steam Shovel Co.

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Erie Steam Shovel Co.
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Schofield-Burkett Cons. Co.
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Mueller Machine Co., Inc.

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Anness & Potter Fire Clay Co.

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Marion Mach., Fy. & Sup. Co.

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Louisville Machine Mfg. Co.

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International Clay Mach. Co.
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Toronto Fdry. & Mach. Co.

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Bristol Company, The
Brown Instrument Co.

Gears

Caldwell Co., W. E.
Caldwell & Son Co., H. W.
Crossley Machine Co.
Dodge Sales & Eng. Co.
Link-Belt Company
Morse Chain Co.
Nuttall Co., R. D.

Generators.

Fuerst Friedman Co.

Gloves

Des Moines Glove & Mfg. Co.

Granulators

Bonnot Co.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Steele & Sons, J. C.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.

Grates and Grate Bars

Canton Grate Co.
Crossley Machine Co.
Hadfield-Penfield Steel Co.
Frost Manufacturing Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Marion Mach., Fdry. & S. Co.
Martin Grate Co.
Robinson, Frank H.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.

Gravity Carriers

Mathews Gravity Carrier Co.
Standard Conveyor Co.

Heat Insulation

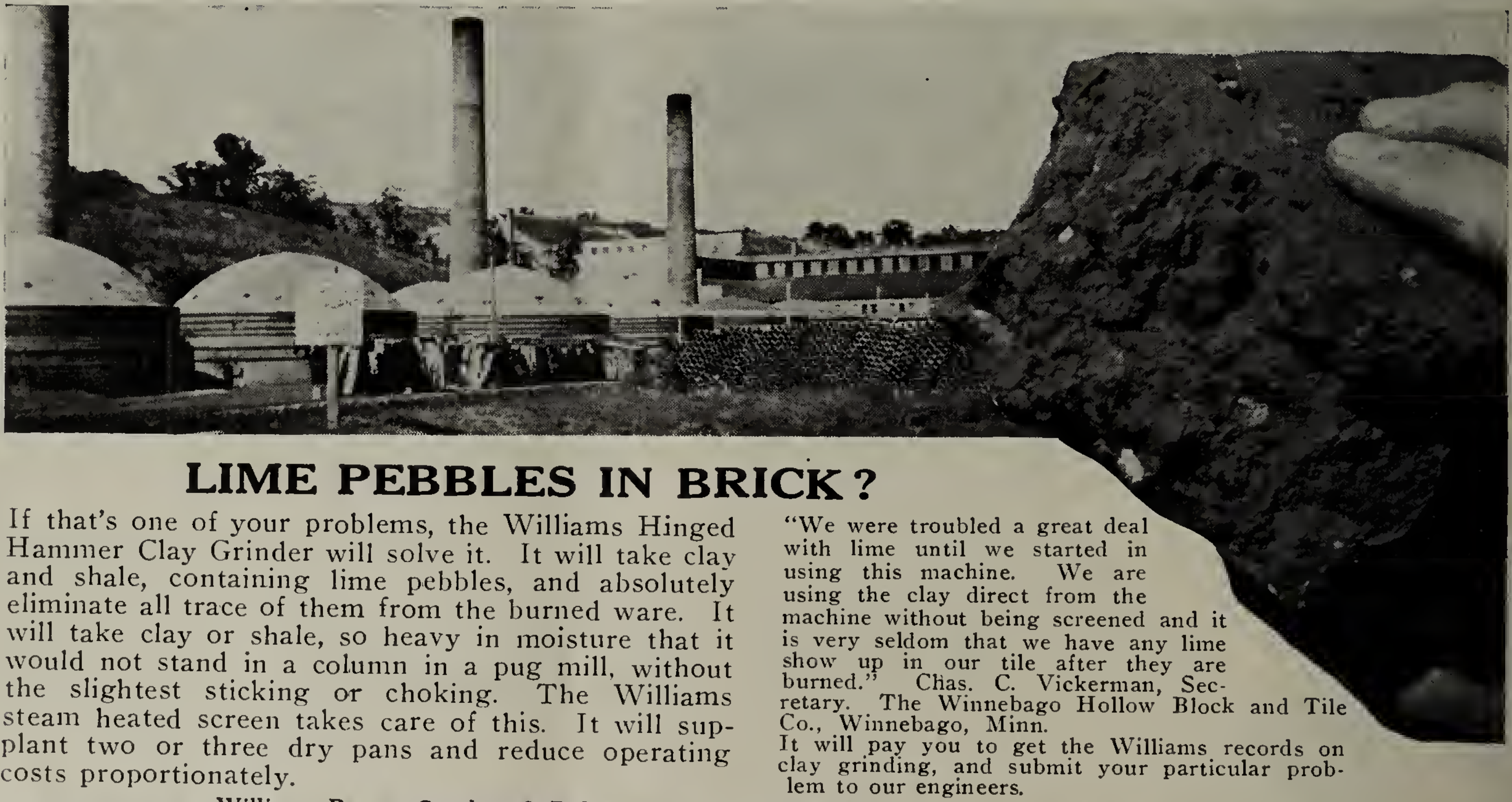
Armstrong Cork & Insulation Co.
Celite Products Co.

Heat Treating Furnaces.

Brown Instrument Co.

Hoists

Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Link-Belt Company
Louisville Machine Mfg. Co.
Manufacturers Equipment Co.
Stephens-Adamson Mfg. Co.
Wellington Machine Co.



LIME PEBBLES IN BRICK?

If that's one of your problems, the Williams Hinged Hammer Clay Grinder will solve it. It will take clay and shale, containing lime pebbles, and absolutely eliminate all trace of them from the burned ware. It will take clay or shale, so heavy in moisture that it would not stand in a column in a pug mill, without the slightest sticking or choking. The Williams steam heated screen takes care of this. It will supplant two or three dry pans and reduce operating costs proportionately.

"We were troubled a great deal with lime until we started in using this machine. We are using the clay direct from the machine without being screened and it is very seldom that we have any lime show up in our tile after they are burned." Chas. C. Vickerman, Secretary. The Winnebago Hollow Block and Tile Co., Winnebago, Minn.

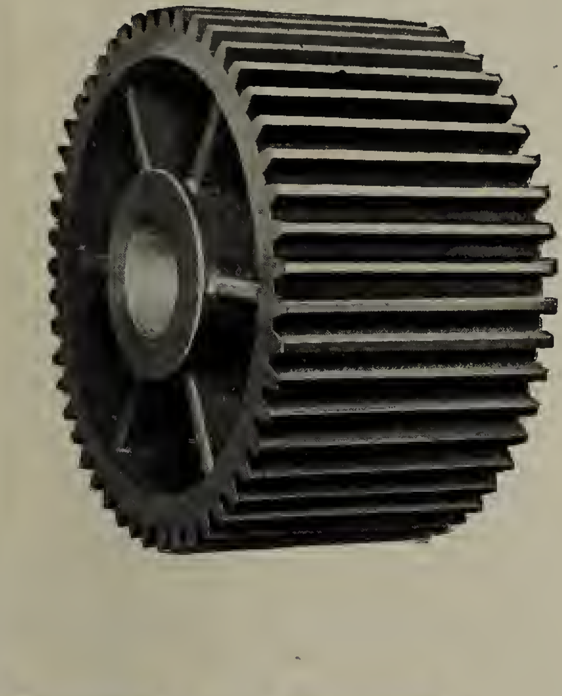
It will pay you to get the Williams records on clay grinding, and submit your particular problem to our engineers.

Williams Patent Crusher & Pulverizer Co., 819 Montgomery St., St. Louis, Mo., U. S. A.

Chicago, 37 W. Van Buren St. New York, 15 Park Row San Francisco, 67 Second St.

Williams

PATENT CRUSHERS GRINDERS SHREDDERS



BP Treatment Increased Life Over 700%

"In one of the most difficult services we have, a BP Pinion lasted 348 actual working days. The average life of untreated pinions is 47 days."

"The average life of untreated Cutter Hooks was 14 days. Average life of the hooks you heat-treated for us was 156 days."

These are extracts from the letter of a Brick Plant Superintendent. Don't they contain valuable, money-saving information for you?

WRITE FOR BULLETIN NO. 25

Philadelphia Office:
430 Land Title Bldg.

R.D.NUTTALL COMPANY
PITTSBURGH PENNSYLVANIA

Chicago Office:
2133 Conway Bldg.

Nuttall

WHAT DO YOU DO?

It is probable that a new problem presents itself to you—or to some of your associates at least once each week. Do you solve it satisfactorily or do you let it slide? Why not insure yourself against such incidents? Start a factory library, fill it with a few choice books that deal with your plant and manufacturing problems. From this list you should be able to select a splendid assortment.

Bricklaying in Modern Practice	$1.20
Bricklaying, Rudiments of Practical	.75
Bricklaying System	4.00
Brick Work (Walker)	.85
Brickwork and Masonry	3.00
Building Construction and Superintendence, Part 1, Masons' Work	7.00
Ceramic Industries (A Treatise on) E. Bourry	6.00
Clay Plant Construction and Operation	4.00
Clays: Their Occurrence, Properties and Uses	5.00
Clayworkers' Handbook	6.50
Clayworking Problems	1.50
Directory of Dealers (Raw Ceramic Materials)	.50
Engines and Boilers	1.50
Engineering for Land Drainage	2.50
Finding and Stopping Waste in Modern Boiler Rooms. Vol. 2	1.00
Garages and Motor Boat Houses	$2.00
Glazer's Book	1.25
Hollow Tile Silo, 100 copies	5.00
How to Build Furnace Efficiency	1.00
Kent's Mechanical Engineers' Pocket Book	7.00
Land Drainage	2.00
Manufacture of Roofing Tile (English Edition)	1.25
Manufacture of Roofing Tile (Worcester)	.75
Modern Brickmaking	7.00
Observations on Pottery	.60
Powdered Coal as a Fuel	4.50
Practical Farm Drainage	1.75
Producer Gas and Gas Producers	4.00
Refractories and Furnaces	5.00
Rock Excavation, Handbook of	5.00
Scientific Industrial Efficiency	2.00
Scumming and Efflorescence	.50
Silo (The Hollow Tile) 100 copies	5.00
Steam Power	2.50

Select those books that you want the most, and we will send them to you postpaid upon receipt of price. No books sent on approval. All foreign books subject to 15% import duty.

Brick and Clay Record

407 S. Dearborn St.,
Chicago, Illinois

Buyers' Directory of Manufacturers—Continued

Hollow Brick Machinery

Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Manufacturers Equipment Co.
Robinson, Frank H.
Steele & Sons, J. C.
Stevenson Co.

Hose

New York Belting and Packing Co.
Quaker City Rubber Co.

Hydrometers or Moisture Indicators

Lancaster Iron Works, Inc.
Manufacturers Equipment Co.

Instruments, Scientific.

Brown Instrument Co.

Insulating Materials (Heat)

Armstrong Cork & Insulation Co.
Celite Products Co.

Kilns

American Dressler Tunnel Kilns, Inc.
Chambers Bros. Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Machy. Co.
Manufacturers Equipment Co.
Minter System.
Russell Engineering Co.
Schaffer Eng. & Equip. Co.

Kiln Accessories

Caldwell Co., Inc., W. E
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Robinson, Frank H.
Works.
Wellington Machine Co.

Kiln Bandings

Gallagher Bros.
International Clay Mach. Co.
Robinson, Frank H.

Kiln Doors and Frames

Wellington Machine Co.

Kiln Expert

Haigh, L.

Kiln Insulation

Armstrong Cork & Insulation Co.
Celite Products Co.

Loaders (Wagon and Truck)

Link-Belt Company
Sunbury Mfg. Co.

Locomotives

Brookville Truck & Tractor Co.
Davenport Locomotive Works.
Fate-Root-Heath Co.
Goodman Mfg. Co.
Hadfield-Penfield Steel Co.
Industrial Equipment Co.

Locomotive Cranes

Ball Engine Co.
Bucyrus Company
Erie Steam Shovel Co.
Link-Belt Company

Machinery, Trans'n (Power).

Morse Chain Co.

Manganese

Hy-Grade Manganese Co.
Lavino & Co.
Roessler & Hassiacher Chemical Co.

Mangles

Philadelphia Drying Machy. Co.
Proctor & Schwartz

Meters.

Brown Instrument Co.
Fuerst Friedman Co.

Molds

Bonnot Co.
Crossley Machine Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Robinson, Frank H.
Wellington Machine Co.

Mold Sanders

International Clay Mchy. Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Potts & Co., C. & G.
Wellington Machine Co.

Motor Pulleys.

Fuerst Friedman Co.

Motor Trucks.

Packard Motor Truck Co.

Motors—Electric

Burke Electric Co.
Fuerst Friedman Co.
Wellington Machine Co.

Oil Burners

Lancaster Iron Works, Inc.

Oil Burning Systems.

Hoppin & Co., C. A.

Oil Tanks.

Duff Patents Co., Inc.
Wayne Tank & Pump Co.

Optical Pyrometers.

Brown Instrument Co.

Ox-Acetylene Welding.

Gallagher Bros.

Packings and Mechanical Rubber Goods

New York Belting and Packing Co.
Quaker City Rubber Co.

Paints (Mineral)

Hy-Grade Manganese Co.

Pallets and Trays

Lancaster Iron Works, Inc.

Ohio Galvanizing & Mfg. Co.
Robinson, Frank H.
Wellington Machine Co.

Pans, Dry Pans, Wet Pans, Clay or Chaser Mills Combination Tempering Pans

Bonnot Co.
Chambers Bros. Co.
Crossley Machine Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Manufacturing Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Mueller Machine Co., Inc.
Robinson, Frank H.
Toronto Fdry. & Mach. Co.
Stevenson Company

Perforated Sheet Metal

Hendrick Mfg. Co.
Harrington & King Perforating Co.
Robinson, Frank H.
Wellington Machine Co.

Poidometer

Schaffer Eng. & Equip. Co.

Portable Track

International Clay Mach. Co.
Manufacturers Equipment Co.
Robinson, Frank H.

Potentiometers

Brown Instrument Co.

Potters' Machinery

Bonnot Co.
Fate-Root-Heath Co.
International Clay Mach. Co.
Mueller Machine Co., Inc.
Wellington Machine Co.

Power Plant Equipment (Complete)

Bonnot Co.
Burke Electric Co.
Dodge Sales & Engineering Co.

Frost Manufacturing Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Link-Belt Co.
Stephens-Adamson Mfg. Co.
Wellington Machine Co.

Power Transmission

Caldwell Co., W. E.
Caldwell & Son, H. W.
Dodge Sales & Eng. Co.
Link-Belt Company
Stephens-Adamson Mfg. Co.
Wellington Machine Co.

Pressure Gages.

Brown Instrument Co.

Producer Gas

Duff Patents Co. Inc.

Pug Mills

Bonnot Co.
Chambers Bros. Co.
Claycraft Service Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Muller Machine Co., Inc.
Potts & Co., C. & G.
Robinson, Frank H.
Steele & Sons, J. C.
Stevenson Co.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.

Pulleys, Cast Iron

Caldwell & Son Co., H. W.
Dodge Sales & Eng. Co.
International Clay Mach. Co.

Pulverizers

American Pulverizer Co.
Crossley Machine Co.
Gruendler Patent Crusher & Pulv. Co.
Mueller Machine Co., Inc.
Robinson, Frank H.
Stevenson Co.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.
Williams Patent Crusher & Pulv. Co.

Pump, Dredging and Sand

Bucyrus Company

Pyrometers

Bristol Co.
Brown Instrument Co.
Engelhard, Chas.
Frink Pyrometer Co.
Thwing Instrument Co.
Wilson Maeulen Co.

Rack Cars

Wellington Machine Co.

Railroad Ditchers

Ball Engine Co.
Bucyrus Company
Erie Steam Shovel Co.

Rails (Frogs and Switches)

International Clay Mach. Co
Robinson, Frank H.

Rattler

Bonnot Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Manufacturers Equipment Co.
Robinson, Frank H.
Wellington Machine Co.

Recording Pressure Gages

Bristol Company, The
Brown Instrument Co.

Regulators.

Bristol Company, The
Brown Instrument Co.

Represses

Bonnot Co.
Chambers Bros. Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works, Inc.
Robinson, Frank H.
Steele & Sons, J. C.

Revolving Screens

Gallon Iron Works.
Hendrick Manufacturing Co.
International Clay Mach. Co.
Link-Belt Company
Robinson, Frank H.
Stephens-Adamson Mfg. Co.

Results! Results!

Classified ads in "Brick and Clay Record" produce results. Concerns like Fraser Brick Co., The Chanute Brick and Tile Co., Sphar Brick Co., and scores of others have written to tell us so. Below we quote from a few of the many complimentary letters received:

"Kindly discontinue this ad, as we sold all the car racks the first of the month, thanks to your good publication."

"Results obtained are so satisfactory that it will not be necessary to reinsert the advertisement."

"I thank your company for the good service rendered to me; as an advertising medium, I will say that your paper gets the results. Not less than 75 letters I received on three small ads."

"We wish to compliment you on the good results obtained thru advertisement carried in the 'Brick and Clay Record'. We carried our advertisement in several different publications, and ad carried through your columns is the only one that brought us results."

"Had excellent results from the ad, and have purchased everything I need at the present."

RATES

8c per word for first insertion.

6c per word for each additional insertion; $1.00 minimum charge.

Write for our card of display classified rates if you are interested in larger space.

"Brick and Clay Record" is published every other Tuesday—no long waits between issues. Send in your order now.

BRICK AND CLAY RECORD, 407 S. Dearborn St., Chicago, Ill.

COMPETITION?

Naturally—We meet all sorts of it.

But when we started we decided that while competition might be the life of trade it could easily result in being the death of quality.

We decided that when a man needs to measure high temperature he wants equipment *adequate* for that purpose and that he would be willing to pay a fair price for it.

ENGELHARD PYROMETERS

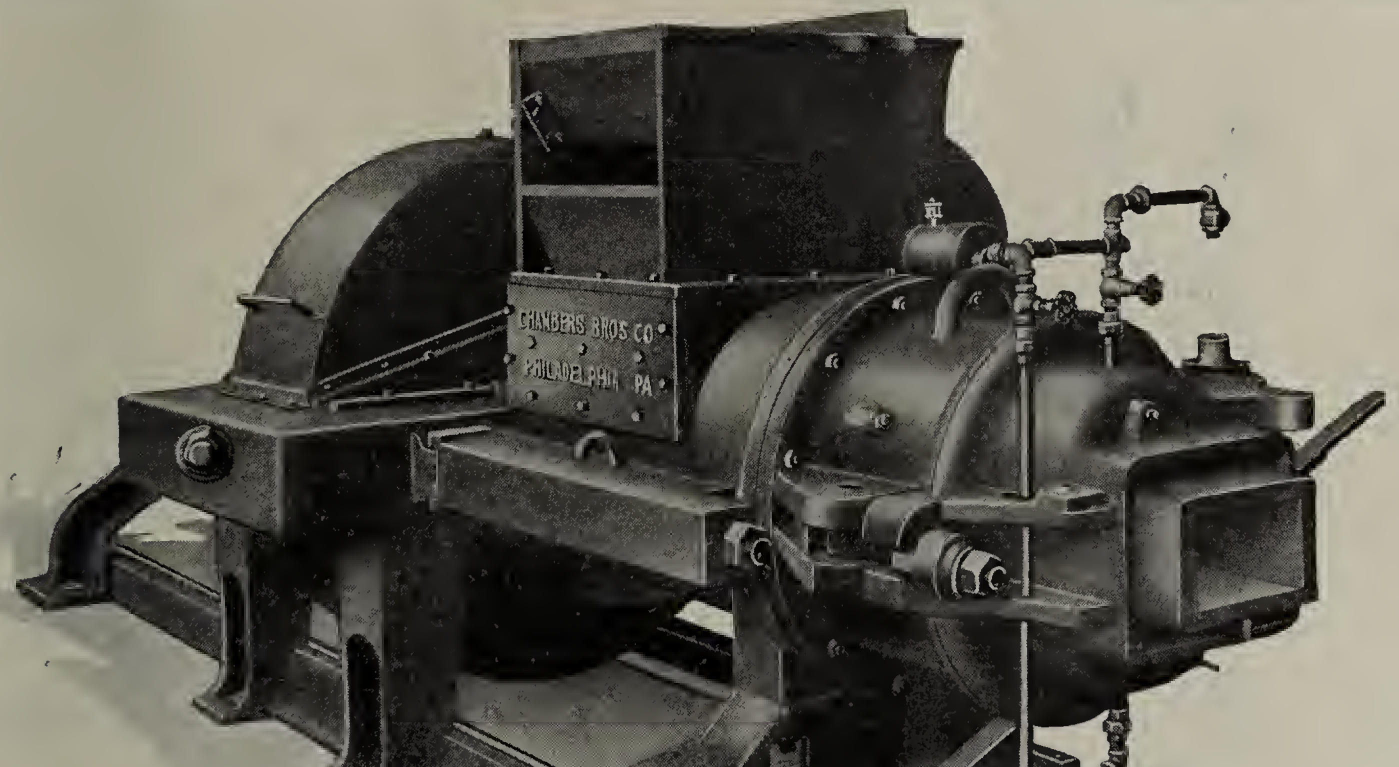
have always been built with that idea in mind. We are always competing with ourselves to see if we can produce pyrometers which will break the records which our equipment has made for long, dependable service with low upkeep. And the result of this policy for our customers has been *true economy.*

They *know* that

Engelhard Pyrometers Are Good Pyrometers to Standardize on.

Charles Engelhard, Inc.

30 Church Street **Cat. B-2** **New York City**



Number Two Size

KEYSTONE

AUGER MACHINE

Showing Rotary Feed Hopper and Piping for Two Point Lubricating Die.

Weight of machine exclusive of cutter, about 15,000 pounds. We guarantee satisfaction.

CHAMBERS BROS. CO., Philadelphia, Pa.

Buyers' Directory of Manufacturers—Continued

Roofing Tile Machinery
Bonnot Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.

Rotary Converters.
Fuerst Friedman Co.

Rope Drives
Dodge Sales & Eng. Co.
Link-Belt Company
Stephens-Adamson Mfg. Co.

Rope (Wire and Manilla)
Manufacturers Equipment Co.
Robinson, Frank H.
Williamsport Wire Rope Co.

Rotary Dryers
Duff Patents Co. Inc.
Hadfield-Penfield Steel Co.
Lancaster Iron Works, Inc.

Sand Lime Brick Machinery
Hadfield-Penfield Steel Co.
Manufacturers Equipment Co.

Sagger Clay
Anness & Potter Fire Clay Co.

Sand Dryers
Wellington Machine Co.

Sand Crushers
Wellington Machine Co.

Sand Mills
Frost Manufacturing Co.

Scrapers, Plows and Clay Gatherers
Eagle Iron Wks.
Schofield-Burkett Cons. Co.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.

Screen Plates.
Louisville Machine Mfg. Co.

Screens (Clay and Cement)
Bonnot Co.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Harrington & King Perforating Co.
Hendrick Mfg. Co.
International Clay Mchy. Co
Lancaster Iron Works, Inc.
Link-Belt Company
Mueller Machine Co., Inc.
Robinson, Frank H.
Schofield - Burkett Construction Co.
Stephens-Adamson Mfg. Co.
Stevenson Co.
Tyler Co., W. S.

Screens (Including Vibrating)
Robinson, Frank H.
Tyler Co., W. S.

Screen Plates
Wellington Machine Co.

Screens (Rolled Slot)
Tyler Co., W. S.

Screns (Wire)
Link-Belt Company
Tyler Co., W. S.

Screw Conveyors
Caldwell & Son Co., H. W.
Link-Belt Company
Stephens-Adamson Mfg. Co.
Wellington Machine Co.

Separators
Tyler Co., W. S.

Sewer Pipe Machinery
Bonnot Co.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Manufacturers Equipment Co.
Stevenson Company
Toronto Fdry. & Mach. Co.

Shafting
Caldwell & Son Co., H. W.
Dodge Sales & Eng. Co.

Shakers (Testing Sieve)
Tyler Co., W. S.

Shale Planer
Eagle Iron Works
Stephens-Adamson Mfg. Co.

Sheaves
Crossley Machine Co.
Link-Belt Company

Shovels (Power)
Ball Engine Co.
Bay City Dredge Works
Wellington Machine Co.
Bucyrus Company
Erie Steam Shovel Co.
Link-Belt Company
Thew Automatic Shovel Co.

Sieves (Testing)
Tyler Co., W. S.

Sifters
Wellington Machine Co.

Silent Chain Drives
Link-Belt Company

Soft Mud Brick Machines
Bonnot Co.
Chambers Bros. Co.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works. Inc.
Manufacturers Equipment Co.
Robinson, Frank H.
Wellington Machine Co.

Sprockets
Caldwell & Son Co., H. W.
Dodge Sales & Eng. Co.
Link-Belt Company
Morse Chain Co.
Stephens-Adamson Mfg. Co.
Wellington Machine Co.

Stacks
Duff Patents Co., Inc.
Frost Manufacturing Co.
Hendrick Manufacturing Co.
Lancaster Iron Works, Inc.

Steel Pallets
Lancaster Iron Works, Inc.
Ohio Galvanizing & Mfg. Co.

Steel Plate Construction
Duff Patents Co., Inc.
Hendrick Mfg. Co.

Stiff Mud Brick Machines
Bonnot Co.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Robinson, Frank H.
Steele & Sons, J. C.

Supplies
Bonnot Co.
Chambers Bros. Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mch. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Potts & Co., C. & G.
Robinson, Frank H.
Steele & Sons, J. C.
Stevenson Co.
Toronto Fdry. & Mach. Co.
Wellington Machine Co.

Switchboards.
Fuerst Friedman Co.

Tachometers.
Brown Instrument Co.

Tanks and Tank Towers
Caldwell Co., Inc., W. E.
Crossley Machine Co.
Duff Patents Co., Inc.
Frost Manufacturing Co.
Hendrick Manufacturing Co.
Link-Belt Company
Lancaster Iron Works. Inc.

Temperature and Pressure Regulators
Bristol Company, The
Brown Instrument Co.

Thermocouples.
Brown Instrument Co.

Thermometers
Bristol Co.
Brown Instrument Co.
Engelhard, Chas.
Manufacturers Equipment Co.
Thwing Instrument Co.

Thermometers, Recording
Brown Instrument Co.

Tile Machinery
Bonnot Co.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Mueller Machine Co., Inc.
Potts & Co., C. & G.
Robinson, Frank H.
Steele & Sons, J. C.
Stevenson Co.
Toronto Fdry. & Mach. Co.

Time and Operation Recorder
Bristol Company, The
Brown Instrument Co.
Robinson, Frank H.

Trailers.
Ask Brick and Clay Record.

Tractors
Clark Tructractor Co.
Wellington Machine Co.

Tramways (Aerial Wire Rope)
Link Belt Company

Transformers.
Fuerst Friedman Co.

Transmission Belting
Gandy Belting Co.
Quaker City Rubber Co.

Transmission Machinery
Link-Belt Company

Transmissions, Silent Chain
Link-Belt Company
Morse Chain Co.

Trucks
International Clay Mach. Co.
Robinson, Frank H.
Steele & Sons, J. C.
Toronto Fdry. & Mach. Co.

Truck Body.
American Truck Body Co.

Trucks (Mule).
Wellington Machine Co.

Turntables
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works, Inc.
Robinson, Frank H.
Stephens-Adamson Mfg. Co.
Toronto Fdry. & Mach. Co.

Unloader
Sunbury Mfg. Co.

Valves
Crossley Machine Co.
Jenkins Bros. Co.

Valves (Pump)
New York Belting & Packing Co.

Wagon and Truck Loaders
Link-Belt Company

Waterproof Belting
Gandy Belting Co.

Wet Pans.
Eagle Iron Wks.

Wheels
Robinson, Frank H.
Wellington Machine Co.

Wheelbarrows
Bonnot Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co
Lancaster Iron Works, Inc.
Manufacturers Equipment Co.
Robinson, Frank H.
Steele & Sons, J. C.
Toronto Fdry. & Mach. Co.

Winding Drums
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mchy. Co.
Lancaster Iron Works, Inc.
Louisville Machine Mfg. Co.
Wellington Machine Co.

Wire Cloth
Robinson, Frank H.
Tyler Co., W. S.

Wire Rope
Manufacturers Equipment Co.
Robinson, Frank H.
Williamsport Wire Rope Co.
Gallagher Bros.

Wire Screen.
Robinson, Frank H.

Another Example of Real Economy!

The illustration is a photograph of our brick conveyer used by Hudson Cement & Supply Co., Washington, D. C.

For loading trucks out of kilns, it formerly took six men one hour to handle and load 2,000 brick. With 24 feet of roller carrier four men do the work in just half the time.

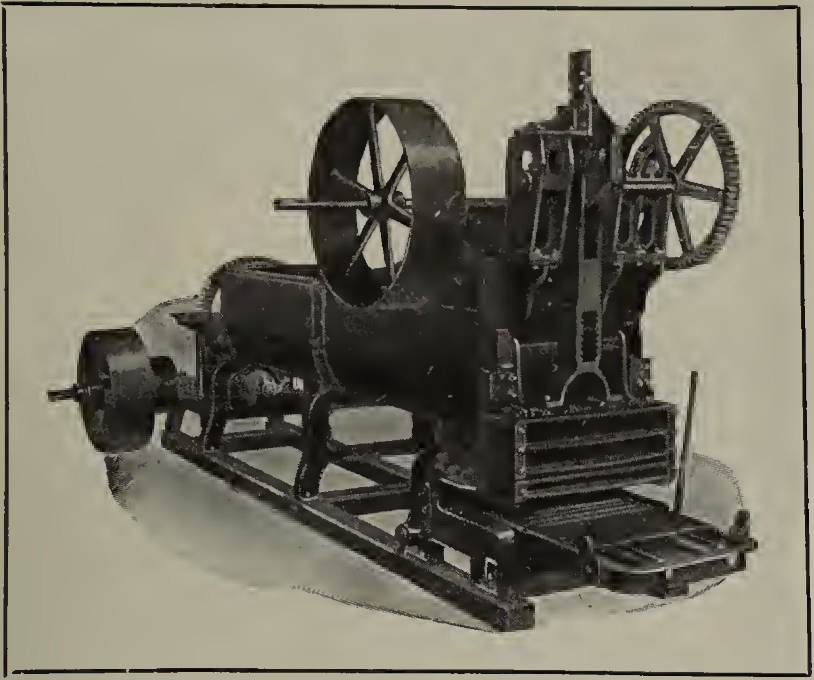
In conveying the brick out to storage piles, the same big saving in both time and labor was accomplished.

Mathews Gravity Brick Conveyor Used by Hudson Cement and Supply Co., Washington, D. C.

MATHEWS GRAVITY CARRIER COMPANY

Branch Factories: Port Hope, Ont., London, Eng. 108 Tenth St., ELLWOOD CITY, PENN.

MATHEWS
SPEED ECONOMY
GRAVITY ROLLER CONVEYER



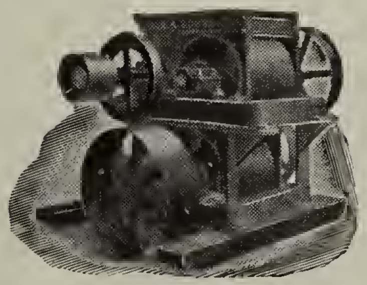
Successful Because It Satisfies

POTTS machinery meets every requirement in the clay products industry. Regardless of your conditions, we have a machine that is just the right type and size to fill your needs most satisfactorily. Over forty years of specialized effort in the manufacture of clay plant machinery has given us the ability to understand and successfully manufacture machines to meet the problem of every manufacturer from the practical operating standpoint.

SEND FOR OUR CATALOG

Write us about your particular problem.
It will incur no obligation on your part.

C. & G. POTTS & COMPANY
Indianapolis, Indiana



STYLE "P" COMPOUND DISINTEGRATOR

Saves from 2 to 20 Men— Does More Work

The Schofield-Burkett Excavator is ideal for the clay products industry, ideal for the manufacturer who has overburden in his pit. It saves the labor of from ten to twenty men, and does more work. Requires only three men to operate. Saves actual dollars on every ton of material handled, and will handle 300 yards every 10 hours.

The Schofield-Burkett Excavator is so simply constructed that it may be operated by an inexperienced laborer and repaired by a country blacksmith.

Ask for our catalog today

SCHOFIELD-BURKETT CONSTRUCTION COMPANY
MACON, GEORGIA

Paved Roads

By Their Deeds Ye Shall Know Them

Paving Brick—by the superior service they give—justify the extra cost of construction of a brick road.

Likewise the American No. 290 Auger Machine—because of the superior service it gives—justifies the extra quality we put into it.

The American No. 290 is particularly adapted for making superior brick but it is doing record breaking work on other Clay Products. "Its Deeds make it Famous" as its users will testify.

Where Is It Used?

Successful plants use it as a pace maker. It speeds production and cheapens cost.

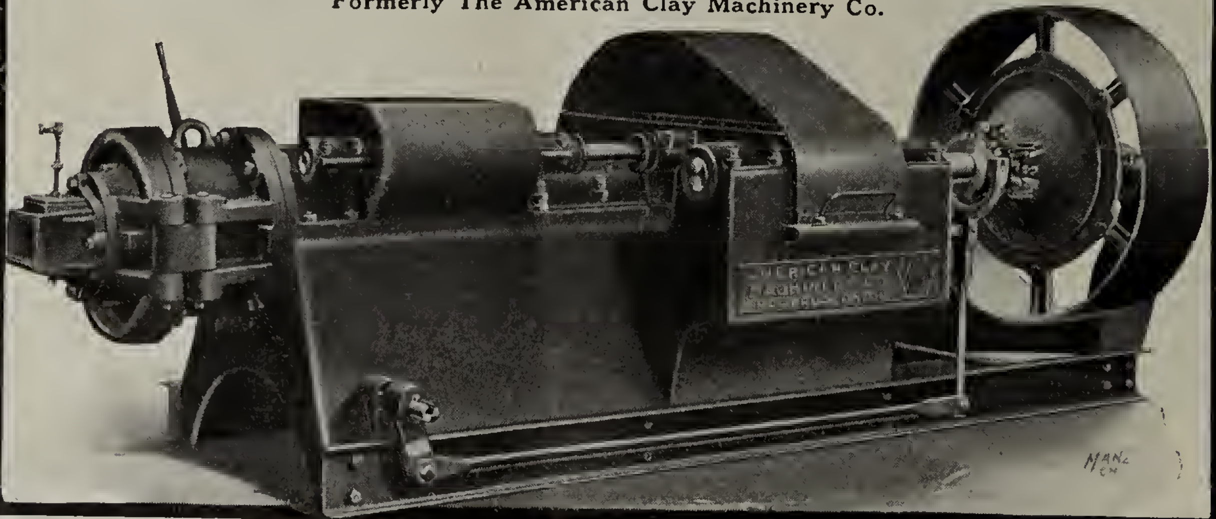
But to be specific, it is used by—

Sheffield Brick & Tile Co., Sheffield, Iowa And Mack Mfg. Co., New Cumberland, West Va. And Dominion Sewer Pipe & Clay Co., Swansea, Ontario.

And by Many Others whose names you can have on application.

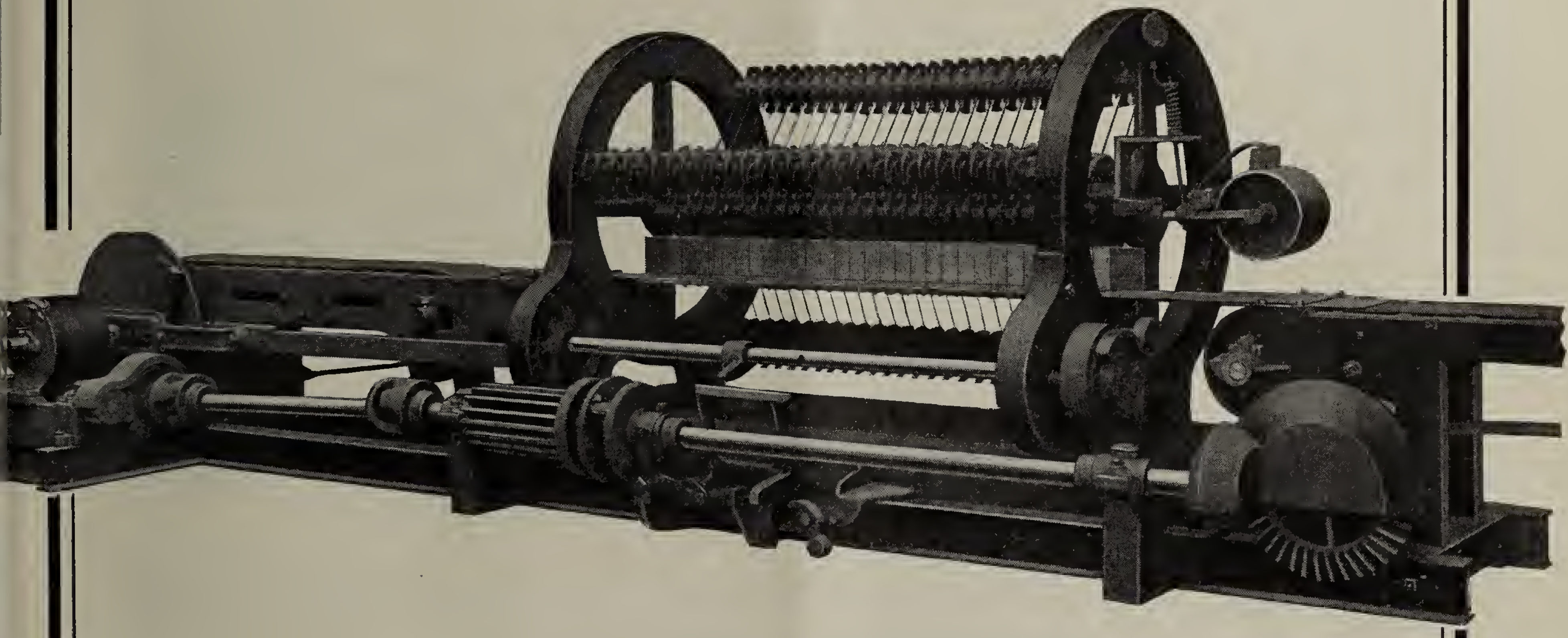
The Hadfield-Penfield Steel Co., Bucyrus, O.

Formerly The American Clay Machinery Co.



The Cleveland B. S. & B. Co., Cleveland, Ohio
The Western Brick Co., Danville, Ill.
The Continental Clay Co., Canton, Ohio
The Stone Creek Brick Co., Stone Creek, Ohio
Shepfer & Moomaw, Sugar Creek, Ohio
The Acme Brick Co., Cayuga, Ind.

Will Install
FREESE CUTTERS



Freese Rotating Automatic Cutter

Where a continuous production
of straight, true brick is essential,
Freese Cutters are usually selected.

E. M. FREESE & COMPANY - GALION, OHIO
Dependable Machinery of Proven Efficiency

LEVIATHAN Conveyor Belts

—*tough all the way through!*

When you consider buying a conveyor belt, make sure it possesses three qualities:

1. **Toughness**
2. **Toughness**
3. **Toughness**

If it's tough on the *conveying surface,* tough in the *middle* and tough on the *driving surface,* it's a good conveyor, no matter who makes it or what it's made of.

Toughness that goes *all the way through* is the only kind of toughness worth paying money for, because when the surface wears off you've got a new tough surface underneath.

LEVIATHAN is tough—*all the way through.*

It would be tough even without any impregnating material, because it is *Tensated.*

Tensation is an exclusive process that makes LEVIATHAN the *densest* belt known. This means that abrasive dust and particles have the hardest kind of time working into the fibres.

Then add the impregnating material.

This material is the result of hundreds of experiments in our own chemical laboratory with special testing apparatus of our own design. It won't crack in cold weather. It stays hard in heat. It is waterproof. It resists acids and steam. When forced into the fibres of LEVIATHAN, it forms an almost impregnable shield against abrasion.

LEVIATHAN is the *toughest* belt made.

You be the judge—try it and compare it with the best conveyors you have ever used.

We'll be glad to send you our booklet on "Conveyor Problems and Their Solution."

LEVIATHAN AND ANACONDA BELTING
GUARANTEED AGAINST STRETCH

MAIN BELTING COMPANY, Philadelphia
New York Boston Chicago Pittsburgh San Francisco
Main Belting Company of Canada, LTD., Montreal

Leviathan AND Anaconda Belts

TENSATED TO REMOVE STRETCH

The Justice Radiated Heat Dryer

(Patented)

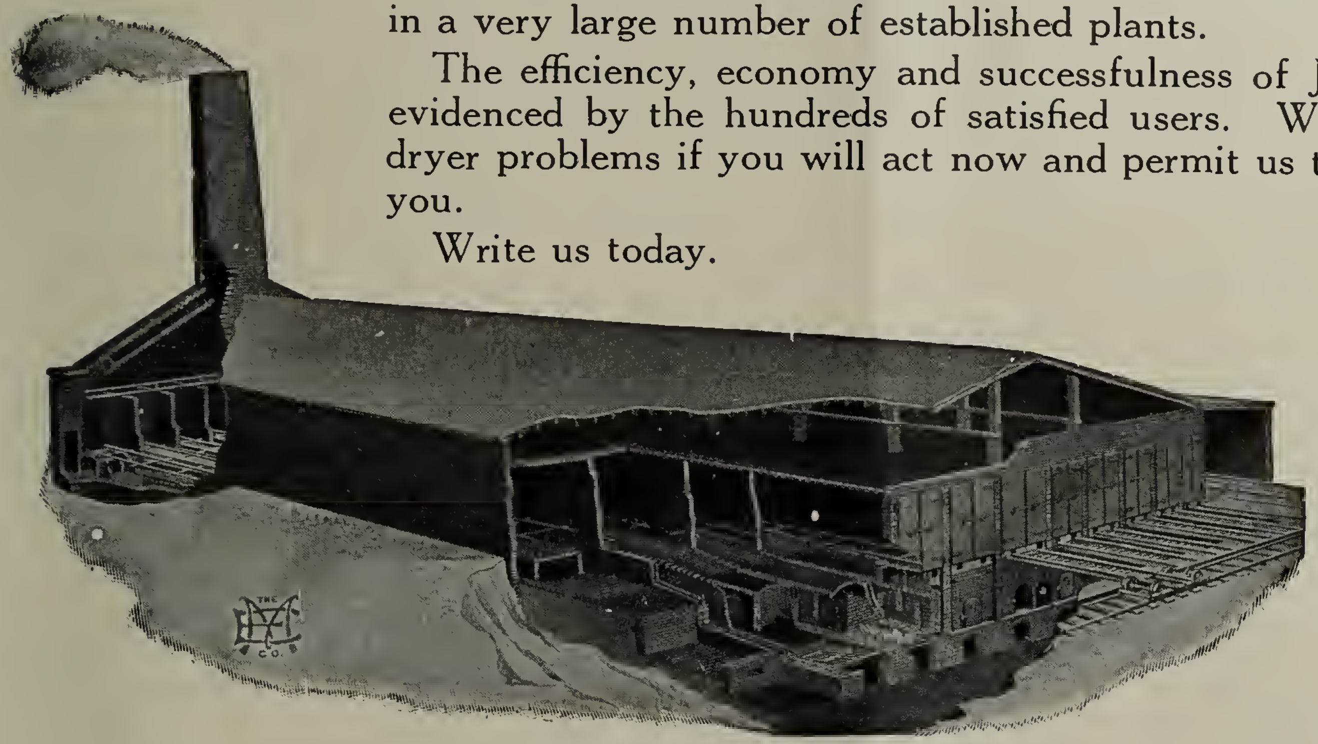
THE Justice Radiated Heat Dryer is the only one worth while on the market today. It is a progressive dryer for Progressive Clay Workers.

The Justice Dryer will dry all your ware all the time for less fuel, less labor and less cost for upkeep than any other dryer.

Let us show you how a real economical dryer will make money for you as against the usually defective and inefficient dryer as found in a very large number of established plants.

The efficiency, economy and successfulness of Justice Dryers are evidenced by the hundreds of satisfied users. We will solve your dryer problems if you will act now and permit us to co-operate with you.

Write us today.



The Meco Single Roll Rock and Shale Crusher

Crush your Shale and Clays to proper size on the Meco Single Roll Rock and Shale Crusher before they enter the dry pans for final grinding.

These crushers are the lowest in price of any on the market when based on weight and capacity.

Each frame is cast in one solid piece and the larger sizes have bronze bearings. They increase dry pan capacity and reduce dry pan repairs.

Arrange now to install your modern crushing, conveying and feeding outfit, and consult us about your requirements. Our engineers will help you design the installation—our experience will be helpful to you.

THE MANUFACTURERS EQUIPMENT CO.
Dayton, Ohio, U. S. A.

Classified Advertisements

Classified advertisements are inserted at the following rates: First insertion, eight cents per word, the captions "For Sale," "Wanted," and address, to be counted as a part of the ad. Additional insertions, six cents per word per insertion. No advertisement inserted for less than $1.00 per insertion. Cash must accompany all orders to insure insertion.

WANTED—HELP

WANTED—Superintendent for shale brick plant, Younghren Gas Burning Kiln. Give references. Address Box 154, Watsontown, Pa. 6-2-1P

WANTED—Yard superintendent for plant making Common Builders. State experience and give reference and salary wanted in first letter. Address Iola Brick Company, Iola, Kansas. 6-2 IP

WANTED—Capable man for superintending, drying, setting and burning exclusively. Hollow tile. Address: 6-2SS, care of "Brick and Clay Record." 6-2-1

WANTED—Experienced man to handle sales, credits and collections in fire brick plant. Must have executive ability and sound judgment. Fine opportunity for permanent position and advancement. Address: 6-2FFO, care of "Brick and Clay Record." 6-2-2

WANTED—A practical, experienced general superintendent for fire brick plant. Must be of high character, able to produce highest quality material at minimum cost. Permanent position. Address: 6-2 EP, care of "Brick and Clay Record." 6-2-2

WANTED A FIRM in Ohio or near its border to manufacture silo material. Easy to make. Address: O. Brumbaugh Silo Co., Louisville, Ohio. 6-3TFX

WANTED—A good live foreman for a modern soft mud brick plant. Capacity 60,000 per day. Must be a man who understands the Arnold-Creager Automatic Machine and power plant equipment. State salary and experience giving references. Address: 6-REF, care of "Brick and Clay Record." 6-1

SALES AGENCY WANTED

Established Building Material Sales Organization with headquarters in New York City and representatives throughout the East, have enlarged their facilities and are in position to push sale of additional reliable products. Have you material or specialty that will stand competition? If so offer your best proposition. Material, 1117 Candler Bldg., New York City. 6-2

WANTED—A first class Brick Burner for a clay yard that makes thirty thousand brick a day, ten round draft kilns with basket grates. This position might suit a man who has been burning on a much larger yard and wants an easier job. We have a town of 4,000 people, good churches, good schools, and a very fine climate. About 50 miles from Birmingham, Ala. Address: 5-3 Alabama, care of "Brick and Clay Record." 5-3-3

WANTED

Man with vision and money to join me in buying and enlarging town development company in substantial and beautiful town at edge of coal field with raw material for brick and tile, cement foundry and by-product propositions. Modern brick plant first industry to be established. Some local capital can be had. Control can be kept at a bargain. Address: 6-2ARS, care of "Brick and Clay Record." 6-2-1

WANTED MOULDERS

Several first class trap and chimney top moulders. Steady and continuous work all the year around. Plants located at Macomb, Illinois; Chattanooga, Tennessee; Birmingham, Alabama and San Antonio, Texas. Only experienced men need apply. Must have references. Address: F. B. Parker, care of W. S. Dickey Clay Mfg. Co., 200 New York Life Bldg., Kansas City, Mo. 4TF

WANTED—POSITIONS

WANTED POSITION with some roofing tile manufacturing company as estimator, draftsman or pattern maker. Have had 15 years of experience in the manufacture of clay roofing tile. Address: 6-2CT, care of "Brick and Clay Record." 6-2-1

WANTED POSITION—As superintendent of brick plant by practical man who understands the making of high-grade face brick, rough texture brick and building brick. Address: 11-HC, care of "Brick and Clay Record." 11TF

WANTED—Position to manage or superintend any first class clay mining, clay washing or clay pulverizing proposition. Efficient and can secure best results. Well known to trade. Best of references. Address: 6-PR, care of "Brick and Clay Record." 6-2

WANTED POSITION in the South or West by an experienced brickmaker, skilled in construction and all phases of mining, quarrying and manufacture, including technical knowledge of machinery, etc. Now employed and can furnish satisfactory reference and reason for change. Address: 6-Keirb, care of "Brick and Clay Record." 6-2P

WANTED—Position as Manager or Superintendent of clay products plant, by man with ten years' practical plant and executive experience in manufacturing fire, silica and building brick; sewer pipe, hollow tile, etc. Could accept position July 1 to 15th West preferred. Address: 5-3 TP, care of 'Brick and Clay Record." 5-3-3

SITUATION WANTED—
TRAFFIC MANAGER or ASSISTANT

31 years old, married, good education and training. Has traveled extensively. 12 years' railroad experience as well as with refinery. Desirous of becoming connected with live firm in the building industry. Will sacrifice salary for future prospects. Chicago or suburbs preferable. Address: 6-TM, care of "Brick and Clay Record." 6-TF

MISCELLANEOUS

WANTED BRICK MANUFACTURERS TO KNOW

We manufacture all styles, gauges and dimensions of metal pallets from flat black or galvanized stock. We have about 3,800 galvanized rolled edge 34-inch by 10-inch by 16 gauge and a fine lot of flat 12 gauge galvanized same dimensions on which we will make a special price for prompt order.

C. H. Horton Co., Painesville, Ohio. 6-2TF

BUSINESS OPPORTUNITY
MEN WANTED

Corporation with extra high grade face brick proposition wants to get in touch with men capable of fitting into strong, superior organization.

Wanted—A-1 man who understands the manufacturing processes from A to Z, capable of building and managing plant.

Man thoroughly familiar with sale of face brick, demand, values, etc.

Man or men to help finance proposition, either personally or through stock-selling organization. Address: Carlton Clay Products Co., Box 591, Franklin, Pa. 5-3-2

WANTED—EQUIPMENT

WANTED—Forty-eight up-draft kiln grate bars at once. Quote price F. O. B. cars, and freight rate to Lester, W. Va., with description. Clay Products Co., Lester, W. Va. 6-4

WANTED—Second hand—good condition—Mathews Gravity Brick carriers and curve. State price in first letter per section without supports. Address: Missoula Brick & Tile Co., Missoula, Montana. 6-2-2

WANTED—Two transfer cars—lower gauge 48 inches—upper gauge 24 inches. Diameter of wheels 14½ inches—cross track on transfer 7 inches above lower track. Length of cross rails 60 inches. Also want two or three Fate-Root-Heath Lift cars—24-inch gauge, length 4 feet 6 inches. Garrison Brick & Tile Co., Garrison, Texas. 6-2-1

WANTED—One sewer pipe press in good condition and cheap. Stevens Bros. & Co., 806 Forsyth Bldg., Atlanta, Ga. 6-2-1

FOR SALE—FARM

FOR SALE—Farm containing 160 acres outside large town near Philadelphia, having about 60 acres of deep clay suitable for making vitrified and common brick. Two railroads alongside with siding from one thru farm. Stream of water on farm and large, deep well on clay bed. Will make very reasonable terms and take part payment in brick. Address: G. S. Walters, 3021 Girard Ave., Philadelphia, Pa. 5-3-1

FOR SALE—FIRE CLAY

FOR SALE—180 A. of Sciotoville Flint Fire Clay, located directly on the B. & O. Ry. between Scioto Furnace & So. Webster, Ohio, in the productive field. Good location for plant. American labor and near the Jackson coal field. Land covered with good second growth timber. J. A. Stout, Beaver, Ohio. 6-2-1P

FOR SALE—PLANTS

FOR SALE—Two kiln tile and pot plant. Sell all or part to right party. Address: 6-2TP, care of "Brick and Clay Record." 6-2-2P

FOR SALE—Half or controlling interest in modern soft-mud brick yard located in western Massachusetts. Unusual opportunity for right man capable of taking entire charge. Yard now operating, plenty of business. Write 6-2Owner, care of "Brick and Clay Record." 6-2TF

SHERIFF'S SALE

Fully equipped plant, capacity, 35,000; five hundred acres, coal and clay. Clays suitable for fire brick, building brick and tile, shale for paving blocks. Situated Cameron, Pa., on the P. R. R. Sale at Emporium, Pa., July 7th, at 1 P. M. 6-2-1

FOR SALE—CLAY LAND

FIRE CLAY

FOR SALE—Large area of fire clay land in southern Pennsylvania. Savage Mountain vein. Unusual shipping advantages. Address: P. O. Box 584, Philadelphia, Penna. 5-2-7

FOR SALE—USED MACHINERY

FOR SALE—One E. M. Freese single geared Brick machine, capacity 5,000 brick per hour, factory rebuilt. Address: 11-RB, care of "Brick and Clay Record." 11TF

FOR SALE—Bensing Automatic Tile Cutter. Cuts drain tile 4 to 8 inches; in good condition. Post Brothers Tile Co., Commerce, Mo. 5TF

FOR SALE—One American Clay Machinery Company 9 ft. Dry Pan Mixer. Practically unused. Price $1,000.00. Speer Carbon Co., St. Marys, Pa. 6-2-1

FOR SALE—One used J. D. Fate Bensing Automatic Clay Cutter, equipped with two cutting reels. Can be used for hollow ware or brick. Cannon & Company, P. O. Box 281, Sacramento, Calif. 5TF

FOR SALE—One 5½ ton Mack truck complete with two Fountain demountable brick bodies. This equipment has had less than 1,000 miles service. Price $3,500.00 F. O. B. Essex Junction, Vt. Also 64 feet, eight foot sections Mathews Gravity brick carrier, including 8 jacks, new two weeks ago. Low price for quick sale. Address: Drury Brick & Tile Co., Essex Junction, Vt. 6-1

Classified Advertisements

EQUIPMENT FOR SALE

1 American Clay Machinery Company 4 mold dry press brick machine with mold box for 9-inch fire brick, complete with 22-inch clutch and pulley. 9 ft. 6 in. wide, 8 ft. long, 8 ft. 6 in. high. No. 701. Weight 32,000 pounds. Used two days only. Practically new.

1 American Clay Machinery Company No. 247 bevel geared pushing type clay feeder, right hand drive. 14 ft. 10 in. long, 6 ft. 6 in. wide. Weight 7,250 pounds. Used two days only. Practically new.

1 Proctor steel construction tunnel truck dryer 66 ft. long, 23 ft. wide, 5 ft. 8 in. high. To hold 44 cars 5 ft. 8½ in. long, 40 in. wide, 26-inch gauge. Capacity of each car 576 pieces 9x4x2½ in. brick. Total capacity of dryer 25,344 pieces each 24 hours. Apparatus complete, including 50 trucks and 2 transfer trucks. Never used nor assembled. Absolutely brand new.

1 Sullivan machinery 4 ft. x 10 ft. new air receiver; 34 unpunched tank steel plates 280 in. x 96 in. x $\frac{5}{16}$ in.

Offered at very attractive prices.

KENNEDY REFRACTORIES COMPANY,
WOOLWORTH BUILDING,

FOR SALE—Fate Imperial Combined Brick, Tile and Hollow Block machine, complete with tile and black dies. Also Fate Tile Cutter used only three years. Disposing of same account larger than needed. $600.00. Will take complete outfit for quick sale. Address: 6-IC, care of "Brick and Clay Record." 6-4

Equipment For Sale

7x12 Davenport 24 in. ga. saddle tank loco.
9x14 Vulcan 36 in. ga. saddle tank
7x12 Davenport 36 in. ga. saddle tank
56 Koppel 24 in. ga. 16 ft. steel flat cars
25 3-yd. Koppel 36 in. ga. all steel dump cars
10 Western 1½ yd. 36 in. ga. dump cars
12 Western 4 yd. 36 in. ga. dump cars.

ZELNICKER IN ST. LOUIS

Write for our new big Bulletin No. 300 1-TF

FOR SALE—One new Elwell Parker elevating platform electric truck; 2 American 9-ft. dry pans; 2 new steel leg bucket elevators for same; one 70 KW 250 volt D. C. generator; one 40 H. P. A. C. motor; 8 pit cars; one new 20 KW 125 volt D. C. generator; 100 feet heavy line shafting with All fittings. 1 Plymouth 3 ton gasoline locomotive, in excellent condition. Bradford Brick & Tile Co., 2 Main St., Bradford, Pa. 4TF

FOR SALE

Steam shovels, dragline machines, locomotives, cars, crushers, pulverizers, dry pans, engines, boilers, electric sets, cranes, derricks, hoists, dryers, washers, screens, elevators.

J. F. Donahoo Company,
Birmingham, Ala.

ROTARY DRYERS

30 New Direct Fired Rotary Dryers.
4 ft. 0 in. Diameter, 30 Feet Long

These Dryers were about to be put into operation as the armistice was signed, and consequently were never used. We are offering them at a sacrifice, complete with driving mechanism, furnace iron, grates, etc. Some are equipped with steam radiators, for steam heated air drying.

McDERMOTT BROS CO.,
Allentown, Penna. 6-2-4P

USED MACHINERY—FINE ORDER

One 10 foot Heavy Duty end delivery, spur gear steel and iron constructed pug mill; three new Boyd Clay Mixers; one electric hoisting gear complete for building or clay pit use; one iron frame new friction hoist suitable for use in brick plant; one brick or clay conveyor uses 12-inch belt; 1880—¾-inch by 10-inch by 12 gauge slightly used flat black steel pallets. We wish the room for the latter and your price is ours.

C. H. Horton Co.,
Painesville, Ohio.
6-2TF

FOR SALE—Steam shovels, two type O Thew steam shovels, ⅝ yard dipper, mounted on traction wheels, thoroughly overhauled, 90% new, REAL BARGAIN. Address: 5-3 Bargain, care of "Brick and Clay Record." 5-3-3

FOR SALE

Chambers End Cut Brick Making Machine of about 30,000 daily capacity—Cutter not included. One Clay Feeder—Steele and Son's make.

BOSTON BRICK COMPANY,
SOUTH BOSTON, VA. 6-2-6

FOR SALE—One two-mold Fernholtz dry press, complete, with extra ornamental molds, dies, elevator, mixer, line shafting, pulleys, etc. Complete equipment for 10,000 capacity plant. Address Superior Press Brick Co., 3190 S. Kingshighway, St. Louis, Mo.

FOR SALE

1 Bruce-Merriam 80 H. P. two-cylinder vertical gas engine, natural or producer gas (Anthracite), with air pump and tanks. In good condition.
1 75 H. P. Sharp-Bassett Anthracite Gas Producer complete with scrubber. Used only about ten months and in first-class condition.
1 3 H. P. W. E. M. Co. Gas Engine.
1 3x3½ Gardiner Air Compressor.

HALL & SONS, INC.,
69 Tonawanda St.,
Buffalo, N. Y. 6-2TF

FOR SALE—One Chambers large size end cut brick machine; one new Steele & Sons brick machine, latest model, never used. No. 0 Thew shovel, in good condition. One crude-oil burning equipment; one new Crawford & McCrimmon waste heat fan, never used. Lot of 6 wooden brick moulds; one 18-inch 4-ply canvas conveyor, 140 feet long; 5 sets 18-inch spoke pattern chilled car wheels. Address: 9-GFE, care of "Brick and Clay Record." 9-TF

FOR SALE

One roll 355 ft. 16 in. 6 ply Milo Canvas Belt

One roll 364 ft. 18 in. 6 ply Milo Canvas Belt

One roll 496 ft. 20 in. 6 ply Milo Canvas Belt

One roll 444 ft. 24 in. 6 ply Milo Canvas Belt

Milo Belt is manufactured by the Boston Woven Hose and Rubber Co.—is guaranteed to render as good service as any red stitched canvas belting on the market. Will sell any portion of any roll at attractive prices. Address Leighton Supply Co., Fort Dodge, Iowa.

Rails and Equipment for Sale

We carry a large stock of most all sizes of new as well as relaying steel rails from 8 lb. to 100 lb. We also carry heavy secondhand railroad rails for side track purposes as well as I beams, bridge girders and building material. We respectfully solicit your patronage and will be glad to quote you on any class of material you may require. We also have frogs, switches, spikes and bolts as well as steel ties.

When next in the market give us an opportunity to quote you.

M. K. Frank,
Frick Bldg., Pittsburgh, Pa.

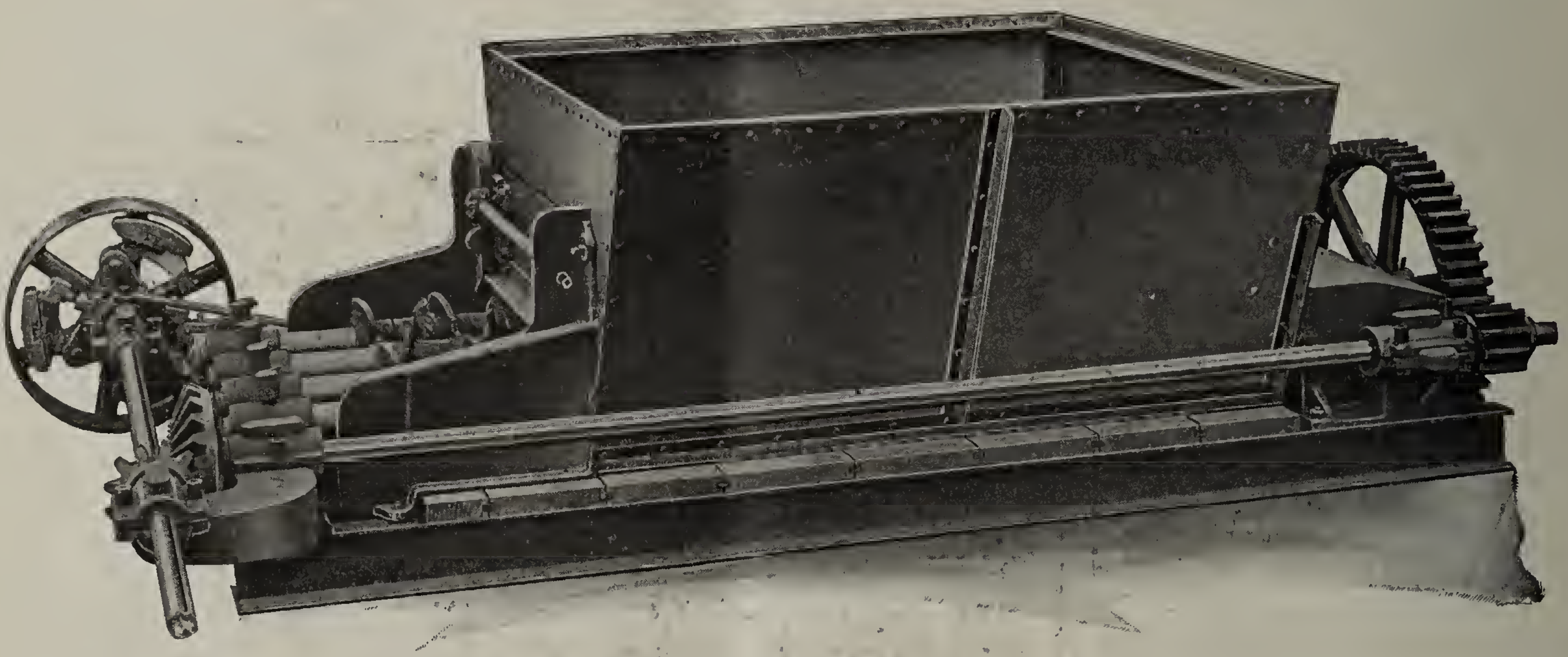
GOOD USED EQUIPMENT WANTED—

The demand is greater than the available supply. Look over your plant, see what machinery is not being used, or which you will replace with larger capacity, and then advertise in "Brick and Clay Record" Classified Department. Published every other Tuesday.

BRICK AND CLAY RECORD, 407 S. Dearborn St., Chicago, Ill.

Steele MACHINERY

Built Right—Priced Right



Steele's Even Feeder

Built in four types. This machine is scientifically and practically correct in every detail. It is capable of withstanding rough usage and gives maximum efficiency at all times. A real profit maker.

Number 5 Pug Mill

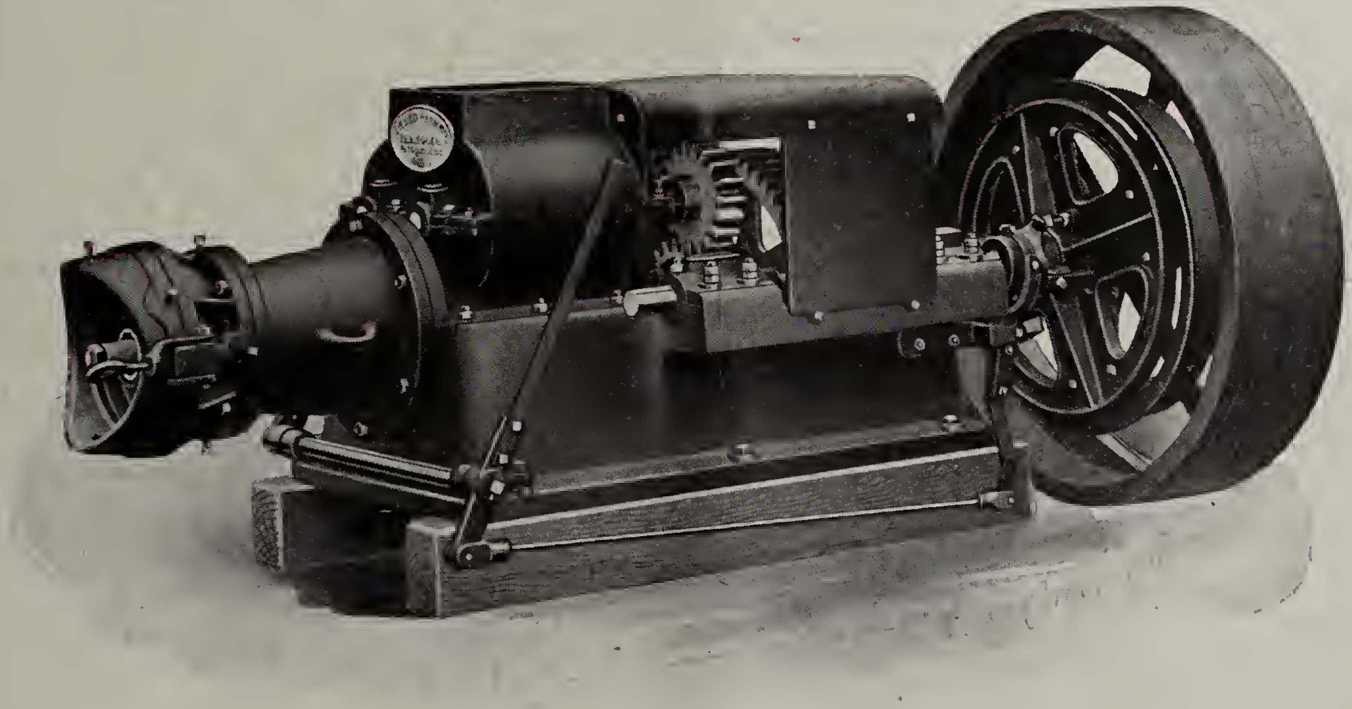
This mill is built for large capacity, heavy duty work. It is powerfully geared, the master gear being 49 inches in diameter. When you install this machine you automatically eliminate all your pug mill troubles.

Page 242 of the Clay Products Cyclopedia more completely describes our line, or ask us for our catalog today. It gives detailed information concerning these machines

J.C. STEELE & SONS, Statesville, No. Carolina

Western Representative: Geo. H. Smith, 3309 E. 37th Street, Kansas City, Missouri
Northern Agents: The Manufacturers Equipment Co., Dayton, Ohio

FATE CLAY-WORKING MACHINERY



"D" Brick and Tile Machine

This machine is a decided favorite with the smaller plants where standard brick and drain tile are manufactured.

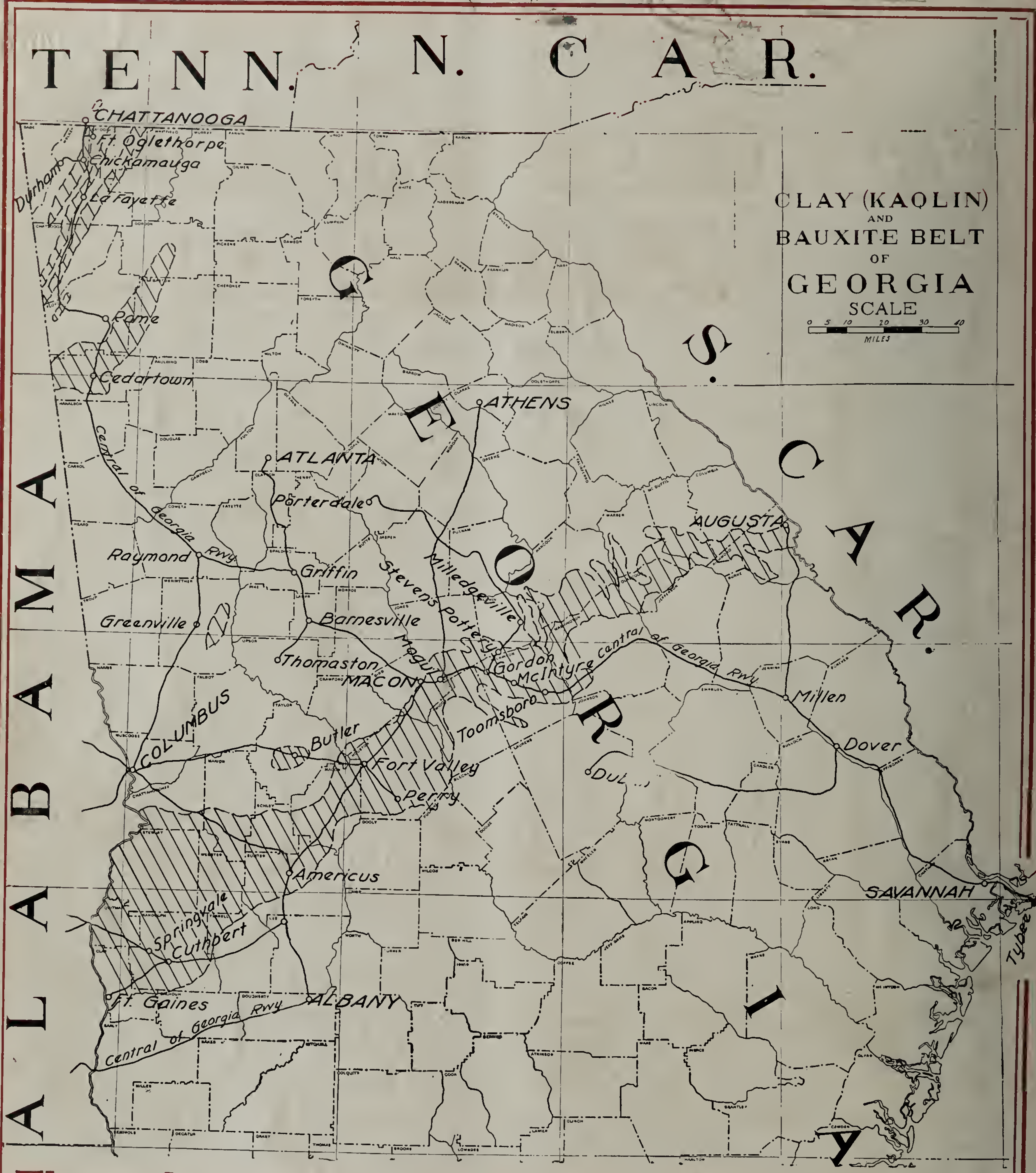
The force feed in the hopper prevents clay from clogging or bridging, and insures even feed to the augers below.

Stands 11 ft. 4 inches in length, and 3 ft. 9 inches to top of hopper. Approximate weight 6,000 pounds. Capacity 2,500 standard brick per hour, or 1,200 4-inch drain tile per hour.

A machine of great strength and equal to larger capacity than claimed. Ask us about it.

The FATE-ROOT-HEATH CO.

Plymouth, Ohio



Through the Clay and Bauxite Belt of Georgia

The route of the Central of Georgia Railroad shown on this map clearly illustrates how thoroughly and completely it covers the clay and bauxite belt of Georgia.

Recent prospecting and developments show the bauxite deposits in this section to be much larger than at first promised, and this supply, together with favorable climatic, labor, water and tranportation conditions, makes this section unusually attractive.

Full details gladly furnished upon application

J. M. Mallory, *General Industrial Agent*

Central of Georgia Railway Company, Savannah, Georgia

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